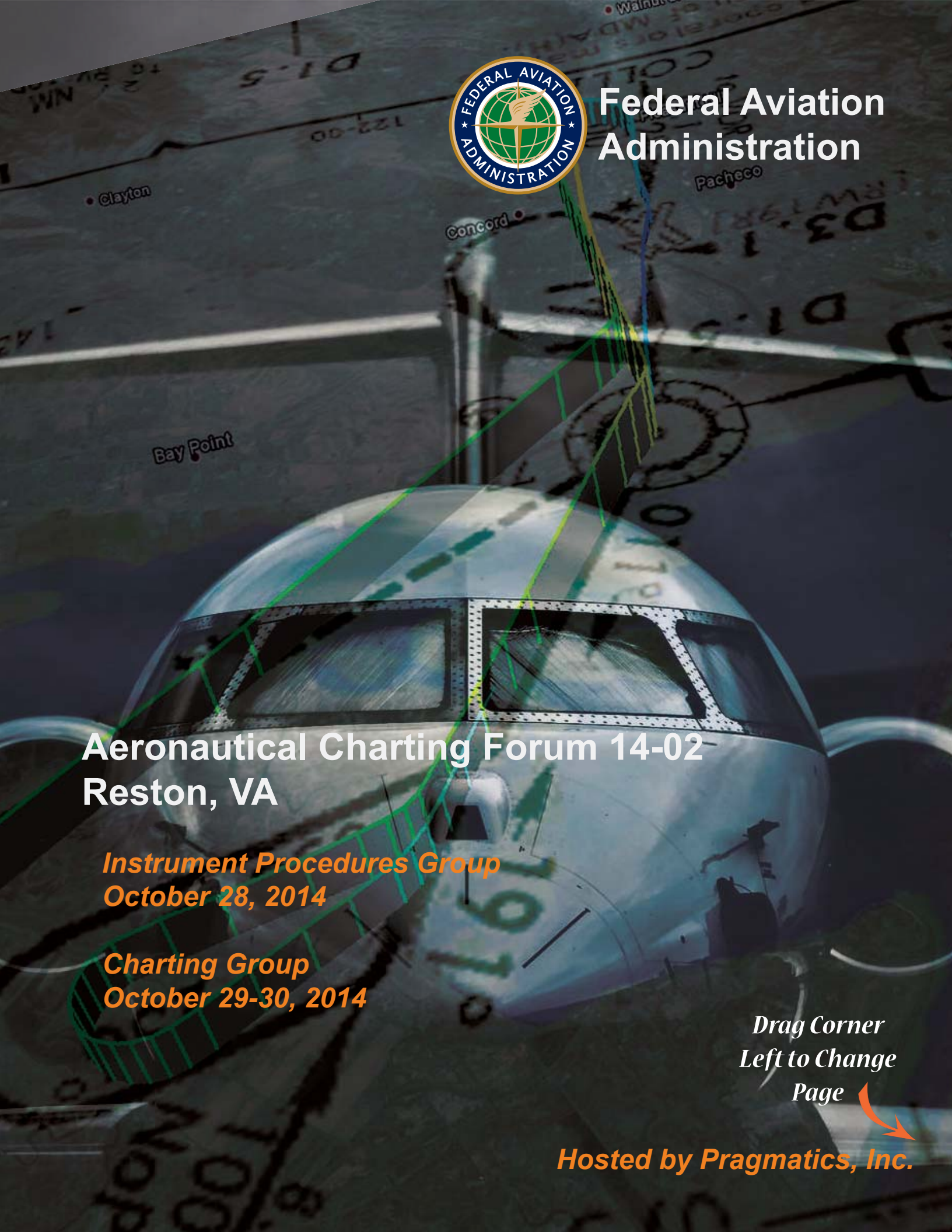

Federal Aviation Administration

Aeronautical Charting Forum 14-02
Reston, VA

Instrument Procedures Group
October 28, 2014

Charting Group
October 29-30, 2014

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Hosted by Pragmatics, Inc.

Instrument Procedures Group

AERONAUTICAL CHARTING FORUM (ACF)
MEETING 14-02 OCTOBER 28-30, 2014
HOST: PRAGMATICS, INC.
1761 BUISNESS CENTER DRIVE
RESTON, VA 20190

INSTRUMENT PROCEDURES GROUP (IPG) AGENDA

I. OPENING REMARKS — Tom Schneider

II. PRAGMATICS WELCOMING COMMENTS — Tim Strutzel

III. REVIEW MINUTES OF LAST MEETING, ACF 14-01 — Steve VanCamp

IV. BRIEFING ACF-IPG Web Site - Update — Tom Schneider

V. OLD BUSINESS (Open Issues)

		OPR
92-02-110	Cold Station Altimeter Settings	AFS-470
02-01-241	Non-radar Level and Climbing Holding Patterns	AJV-8
07-01-270	Course Change Limitation Notes on SIAPs	AFS-420
07-02-278	Advanced RNAV (FMS/GPS) Holding Patterns Defined by Leg Length	NBAA
09-02-291	Straight-in Minimums NA at Night	AFS-420 (US-IFPP)
10-01-292	Removal of the Visual Climb Over Airport Option on Mountain Airport Obstacle Departure Procedures	AJV-8
10-01-294	RNP SAAAR Intermediate Segment Length and ATC Intervention	AFS-470
11-02-298	Converging ILS Coding and Chart Naming Convention	AJV-3B/US-IFPP
12-01-299	Loss of CAT D Line of Minima in Support of Circle-to-land Operations.	AFS-420 (US-IFPP)
12-01-301	Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment	AFS-420 (US-IFPP)
13-01-311	Terminal Arrival Areas	AFS-420 (US-IFPP)
13-02-312	Equipment Requirement Notes on Instrument Approach Procedures	AFS-410/470

13-02-313	Chart Notes for Simultaneous Approaches	AFS-410/AJV-8
14-01-315	90 Degree Airway-to-RNAV-IAP Course Change Limitation: Arrival Holds	AFS-420 (US-IFPP)
14-01-316	RNAV Fixes on Victor Airways Used for RNAV SIAPs.	AJV-8

VI. NEW BUSINESS (New Agenda Items)

		SPONSOR
14-02-317	Use of GPS on Conventional (Ground-Based NAVAID) Instrument Approach Procedures (IAPs)	NBAA
14-02-318	Charting LNAV Engagement Altitudes	APA

VII. NEXT MEETINGS

ACF 15-01 is scheduled for April 28-30, 2015, hosted by ALPA, Herndon, VA.

ACF 15-02 is scheduled for October 27-29, 2015, hosted by Lockheed Martin, Crystal City, VA.

ACF 16-01 is scheduled for April 26-28, 2016, hosted by TBD.

June 11, 2014

Dear Forum Participant

Attached are the minutes of the Aeronautical Charting Forum, Instrument Procedures Group (ACF-IPG) meeting held on April 29, 2014. The meeting was hosted by The MITRE Corporation, 7515 Colshire Ave, McLean, VA. An office of primary responsibility (OPR) action listing (Atch 1) and an attendance listing (Atch 2) are appended to the minutes.

Please note there are briefing slides inserted in the minutes as PDF files shown as stickpins. All are asked to review the minutes and attachments for accuracy and forward any comments to the following:

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The AFS-420 web site contains information relating to ongoing activities including the ACF-IPG. The home page is located at:
http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs420/acfipg/
This site contains copies of minutes of the past several meeting as well as a chronological history of open and closed issues to include the original submission, a brief synopsis of the discussion at each meeting, the current status of open issues, required follow-up action(s), and the OPR for those actions. There is also a link to the ACF Charting Group web site. We encourage participants to use these sites for reference in preparation for future meetings.

ACF Meeting **14-02** is scheduled for **October 28-30, 2014** with ISI/Pragmatics, Inc., 1761 Business Center Drive Reston, VA 20190, as host. ACF meeting **15-01** is scheduled for **April 28-30, 2015** with ALPA, Inc., Herndon, VA as host. ACF **15-02** is scheduled for **October 27-29, 2015** with Lockheed Martin as host.

Please note that **meetings begin promptly at 8:30 AM**. Dress is business casual. Forward new agenda items for the 14-02 ACF-IPG meeting to the above addressees not later than October 10, 2014. A reminder notice will be sent.

We look forward to your continued participation.

Thomas E. Schneider, FAA/AFS-420
Co-Chairman, Aeronautical Charting Forum,
Chairman, Instrument Procedures Group

GOVERNMENT / INDUSTRY AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
Meeting 14-01
The MITRE Corporation
April 29, 2014

1. **Opening Remarks:** Tom Schneider, AFS-420, Flight Standards co-chair of the Aeronautical Charting Forum (ACF) and chair of the Instrument Procedures Group (IPG), opened the meeting at 8:30 AM on October 29. The MITRE Corporation hosted the meeting at their McLean, VA facility. Mr. Al Herndon made welcoming and administrative comments on behalf of MITRE. A listing of attendees is included as attachment 2.

2. Briefings: Tom Schneider, AFS-420, discussed enhancements to the ACF-IPG web site, including functionality of the site, the ongoing effort to expand the history data base to include all issues from inception to present, the new format (mirroring the charting portion of the site) and the prototype new "flip book" design for the conference folders.

3. Review of Minutes of Last Meeting: Steve VanCamp, AFS-420, (ISI/Pragmatics Contract Support), briefed that the minutes of ACF-IPG 13-02, which was held on October 29, 2013 were electronically distributed to all attendees as well as the ACF Master Mailing List on November 28, 2013. There were no changes submitted, and the minutes are accepted as distributed.

4. Old Business (Open Issues):

a. 92-02-110: Cold Station Altimeter Settings (*Includes Issue 04-01-251*).

Kel Christianson, AFS-470, provided a brief history on the issue. He reviewed previous ACF discussions and subsequent activities. A Safety Risk Management Panel (SRMP), including Flight Standards operations and Air Traffic (AT), met and discussed the development of a Safety Risk Management Document (SRMD). This document will determine what needs to be done, specifically pilot/controller education. Once the controller education is close to completion, the FAA will place this guidance in the Notices to Airmen Publication (NTAP), and try to get out as much information thru as many organizations as possible. The goal is to be ready for this coming winter. Ted Thompson, Jeppesen, inquired about usage of a "snowflake" on the approach chart. Kel discussed this would have pilots look to front of book to determine if this is a cold temperature restricted airport, and will provide a link to the NTAP for the airport. This icon will be on every approach to the applicable airport. Val Watson, AJV-3, advised that the source for information will be the National Flight Data Digest (NFDD). The plan is to publish an airport remark for each affected facility, advising that cold temperature adjustment may need to be applied below a listed temperature. Publication of this airport remark would prompt the "snowflake" and a numerical temperature value to be charted on all procedures at a given airport. Ted inquired if data will be sourced via NFDD, but not on the 8260 form? Val responded that this is correct and will avoid the necessity of formally amending all affected procedures. Lynette Jamison, AJR-B1, asked about the number of affected airports. Kel responded that the runway length criteria change from 4000 down to 2500 feet increased the numbers and they are still working on the final list. Ted asked if the current temperature notes [such as "For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15 C (5 F) or above 43 C (109 F)."] on the 8260 form will still be there. Tom Schneider, AFS-420, said yes and that the note only applies to LNAV/VNAV approaches. Ted envisioned two pieces of source for one aspect of charting and suggested this may be confusing. Tom said the LNAV/VNAV cold temp limitation

note is different than the note Kel is referring to, which applies to altitudes on all procedures. Ted said he understands that, but that implementation will be complex because of the two different source streams of procedural temperature information. He restated his concerns with data capture. Bob Lamond, NBAA, will endorse the AOPA Letter to Airman plan and Kel stated this would be welcome. Gary Fiske, AJV-8, asked who will validate/approve this letter. Group discussion followed, touching on scope, format, dissemination, and charting issues. Tom stated that the issue will remain open, with a lot of work continuing. Rick Dunham, AFS-420, stated that this issue is progressing and the hope is to close (mostly) by end of year.

Status: AFS-470 will continue developing an implementation plan. Item Open (AFS-470).

b. 02-01-241: Non Radar Level and Climb-in-Hold (CIH) Patterns.

Eric Fredricks, AJE-31, reported that one of the reasons for the recent FAA reorganization was related to problems with promulgation of Document Change Proposals (DCPs). Unfortunately the DCP to resolve this issue is "caught in the middle", and he is rewriting it. No specific progress to report, issue remains open pending publication.

Status: AJV-8 to continue to track the change, and will advise on progress of the DCP. Item Open (AJV-8).

c. 07-01-270: Course Change Limitation Notes on SIAPs.

Tom Schneider, AFS-420, advised TERPs criteria portion has been revised in Change 26, which has been published. The only item remaining now is the Order 8260.19 guidance change needed to incorporate feeder routes. This will be incorporated into the next revision.

Status: AFS-420 to track Order 8260.19 update. Item Open (AFS-420).

d. 07-02-278: Advanced RNAV (FMS/GPS) Performance of Holding Patterns Defined by Leg Length

Tom Schneider, AFS-420, presented a slide provided by Steve Jackson, AFS-420, () on the issue. John Moore, Jeppesen, inquired about the implementation references on the slides. Ted Thompson, Jeppesen, inquired if still a work in progress. Tom said yes, this is being worked to incorporate into TERPs. Tom pointed out Steve's question on the slides about what is the objective and asked for group input for Steve. John expressed concern with the bullet that stated not all aircraft can hold in these patterns and that additional waypoints (or even dual points) may be required on a single procedure. Ted pointed out that this issue has become convoluted with the combining of several issues, making it hard to define a single objective. Gary Fiske, AJV-8, commented AT has aircraft holding on all the present fixes with no issues. ATC expects a pilot to hit the fix and hold as instructed, which they successfully do now. Ted said it would be regrettable if more holding patterns were developed, since it would introduce more complexity into the cockpit. Kevin Bridges, AIR-130, pointed out that equipment-wise, RNAV holding is an advanced RNP function, meaning it is a special qualification and not every aircraft can accomplish it. Gary said that ATC will assign holding and does not expect to ever ask aircraft for specific capabilities. Kevin added this will be part of RNP airspace (dependent function) limiting where some aircraft can operate. Tom added that this is becoming more complicated, and will include the NavSpec issue. Bob Lamond, NBAA, stated they would be against any LOA requirements. A group discussion followed about functionality, PBN specific examples, aircraft limitations for certain airspace uses, original issue as presented by NBAA,

etc. Tom restated that AFS-420 is just taking the old document and converting into an 8260 series Order, updating for the conventional aspect without changing pattern sizes. NBAA (original submitter) was asked how they would like this ACF issue to proceed; i.e., do we keep open to provide updates to the order? (Which will not include specific requirements from original submission). Bob requested that the issue remain open, and said he will take back and regroup, with some FAA off-line conversations on direction. Mark Steinbicker, AFS-470, stated he was not sure of the accuracy of all facts submitted and that the issue is becoming very convoluted. He is not aware of any strategy document or implementation for NextGen or RNP holding. Holding will be like it is today, whether associated with conventional or RNAV fixes, and he would be hesitant to say patterns will be expanded to account for RNAV. On the OPS side, we allow pilots to use RNAV to hold and they do quite well under most conditions, with the underlying assumption the pilot will be complying with restrictions. Mark is concerned that we are trying to tackle something with criteria that should be worked somewhere else. His recommendation is to leave criteria, pattern size and ops policy "as-is" and work other aspects of the issue. It was agreed to keep this issue open for one more ACF cycle and discuss off line.

Status: Bob Lamond (NBAA) will take back and discuss issue, to include off line discussions with FAA. Item Open (NBAA).

e. 09-02-286: Initial "Climb & Maintain" Altitude on Standard Instrument Departure Procedures

Jim Arrighi, AJV-14, reported that after a 12 year effort, we have implemented climb via procedures, speed adjustment and termination phraseology. This effort has been in the works for over a decade. Results are being monitored and follow-up will be done with AJV-8 and AFS for any adjustments or clarifications as needed. He gave some examples of clarifications, such as Climb Via established two principal criteria, coded restriction with crossing and/or maintain restriction, and how it applies to conventional and RNAV. Jim discussed some pilot confusion on altitudes and phraseology and ATC facility questions. He thanked Bob Lamond, NBAA, and Rich Boll, NBAA, for their development help in the FAA industry workgroup. He mentioned chart change specification and movement of the STAR Order to AFS. Tom Schneider, AFS-420, said top altitude requirement will be in Order 8260.46E, out next month. Jim mentioned some charting issues, which will be addressed in charting portion of forum. Bob agreed issue should be closed. Group discussion on specifics/numbers if tracked on pilot compliance and understanding of issue, along with vector SIDs. Tom showed an example of expect vs. except. Discussion of human factors issues. Discussion of phraseology compliance by pilots and ATC.

Status: Issue CLOSED

Editor's Note: At the Charting Group meeting there was some misunderstanding regarding the publication of "Top Altitudes" which resulted in removing the guidance in Order 8260.46E. See ACF Charting Group Agenda item 13-01-266 for rationale and all future discussions to resolve this issue.

f. 09-02-288: VNAV Minimums vs. Circle to Land

Kel Christianson, AFS-470, discussed that pilots are confused when they review an approach plate and see an LNAV MDA & Circling MDA lower than the LNAV/VNAV DA. ( ) A slide was presented which showed the guidance information that will be included in the AIM to help resolve this confusion. The slide was sent to NBAA, who reviewed and approved it. The new

guidance will be included in the July AIM revision. Bob Lamond, NBAA, stated we can close this issue.

Status: Issue CLOSED

g. 09-02-291: Straight-in Minimums NA at Night

Tom Schneider, AFS-420, briefed on a slide provided by John Bordy, AFS-420. ( ) Bob Lamond, NBAA, then briefed on an NBAA slide ( ) example (Ft. Dodge, IA.) where a 3 foot furrow of dirt in the adjacent farmer's field penetrates the 20:1 surface and has rendered night operations NA. Jay Jackson, AJV-22, discussed 20:1 mitigations (about 2500 of them in system), and stated that for an obstacle, from a data base perspective, the solution seems simple for airports to advise the FAA when one of these minor obstacles is removed so that it can be mitigated. Bob re-emphasized that a plow furrow in a farm field should not constitute a 20:1penetration, stressing that this is not logical and questioned if criteria could take situations like this into account. AFS-420 will continue to monitor progress on this issue.

Status: AFS-420 will continue to work the issue through the US-IFPP. Item Open AFS-420 (US-IFPP).

h. 10-01-292: Removal of the Visual Climb Over Airport Option on Mountain Airport Obstacle Departure Procedures

Eric Fredricks, AJE-31, reported that one of the reasons for the recent FAA reorganization were problems with Document Change Proposals (DCPs). Unfortunately the DCP to resolve this issue is "caught in the middle", and he is rewriting it. No specific progress to report, but it is still an issue and he has all required information.

Status: AJV-8 to continue to track the change, and will advise on progress of DCP's. Item Open (AJV-8).

i. 10-01-294: RNP SAAAR Intermediate Segment Length and ATC Intervention.

Mark Steinbicker, AFS-470, briefed this is an extension of some work being done with Order JO 7110.65, para 4-8-1. There are some concerns about a couple of aspects and the PARC is working to allow 90 degree turn-ons to an IF & IAF. The PARC formed an action team and is making progress on identifying Authorization Required (AR) procedures that need to be scrubbed using a harmonized method to allow the turns (i.e., which procedures are OK and which need application of a speed constraint). The general change of strategy is that most, if not all, of these procedures will have a speed constraint associated with those fixes. If a speed change is required, expect a NOTAM of some type. He is also encouraging outreach from the data base providers to ensure higher confidence. Gary Fiske, AJV-8, is working the DCP which is ready for the coordination process. Mark said procedure design criteria will be in Order 8260.58, around summer of 2015.

Status: AFS-470 to monitor PARC actions and report back next ACF. Item Open (AFS-470).

j. 11-01-296: Magnetic Variation Differences and FMSs

Kel Christianson, AFS-470, advised the AIM guidance was published on April 3. This item can be closed.

Status: Issue CLOSED

k. 11-02-297: Airway "NoPT" Notes on Instrument Approach Procedures

Tom Schneider, AFS-420, advised that Order 8260.19F has been published. This item can be closed.

Status: Issue CLOSED

l. 11-02-298: Converging ILS Coding and Chart Naming Convention.

Brad Rush, AJV-3, briefed on the first location the FAA is changing procedure titles to resolve the converging ILS issues is at Philadelphia (PHL) and they are on schedule for July charting. Procedures are up on the gateway coordination website for viewing. The new naming convention eliminates the word “CONVERGING” prior to ILS in the title, adds “V” and places “(CONVERGING)” at the end of the procedure title. Example “ILS V RWY 27 (CONVERGING)”. If the change at PHL is successful, 5 more locations will be scheduled. Tom Schneider, AFS-420, noted the word “converging” will still be in the title in parentheses, indicating a converging procedure, but NOT necessitating ATC to verbalize it as part of a clearance for the approach. This requirement will be in the next revision to Order 8260.19. All procedure title revisions will be promulgated via the formal amendment process. An inquiry was made as to whether FMS databases will have this “V”? Brad said “yes”, if the specific system has the ability to display procedure suffixes. Mark Steinbicker, AFS-470, inquired about aircraft capabilities. Bob Lamond, NBAA, advised that 50% of business aircraft can currently accommodate more than one suffix. Under the current convention in many cases, the box will default to the lowest minimums and not show the actual suffix (the pilot may not know which approach is displayed). This will require a long term fix between the new software on many aircraft, new hardware on some, and may be a problem with new procedure development. Brad pointed out, with regard to the suffix issue, that right now zero aircraft have converging ILS procedures in their data base. With the “V” suffix convention, at least 50% will have it. General group discussion ensued. Martin Zillig, Lufthansa (LIDO), inquired about the use of “V” vs. a “C” suffix for converging approaches. Group discussion followed on how that was vetted and how the runway L/C/R designators at some airports affected the decision NOT to use “C”.

Status: AJV-3 will continue to monitor US-IFPP activities as well as on-going AJV internal actions, and keep the ACF apprised of the issue status. Item Open AJV-3

m. 12-01-299: Loss of CAT D Line of Minima in Support of Circle-to-Land Operations.

Tom Schneider, AFS-420, briefed a slide provided by John Bordy, AFS-420, () on Change 26 to FAA Order 8260.3B (TERPS), which was published in Feb and clarified the language related to the publication of approach minima. Bob Lamond, NBAA, feels the situation is getting worse, not better, with the “poster child” example of West Point, VA, LOC RWY 10. NBAA asked for Cat C minimums to be added to existing and proposed new procedures. NBAA was told “no” with seven reasons. (Bob requested this be entered into record). () None of the seven reasons pertained to approach categories. NBAA says correct, rational application of policy was not being applied in the decision process for designed Cat C operations, and requesting expedited help to resolve the problem. Currently, pilots can do Cat C on circling approaches at this location. NBAA is fighting these situations one at a time, which has proven extremely time consuming. Bruce McGray, AFS-410, agreed that there

are too many disconnected efforts without proper coordination. Bob said there is a TERPs instruction letter from Sept 2000 they would like reissued with guidance to the three service areas and FPTs. Tom explained that two separate FAA policies exist: AFS has established policy addressing construction of procedures for Cat A-E aircraft; Airports has established policy regarding design standards to support various types of aircraft. Bob believes the ATO is incorrectly using ATO standards and has effectively built a brick wall between the two. NBAA is not looking for policy changes to criteria or standards, but is looking at the correct application of existing standards. He believes AOV should look at this. Gary Fiske, AJV-8, stated to be careful, since AOV is an Air traffic safety organization. Tom said Service Areas are part of the ATO, and AOV provides oversight in their areas. Rick Dunham, AFS-420, said there appears to be a disconnect and that AFS-420 will look at it. Bob said the issue is to correctly apply existing standards, which was clearly not done in the example he provided.

Status: AFS-420 will continue leading the workgroup to develop a recommended position at the US-IFPP. Item Open (AFS-420).

n. 12-01-301: Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment (*Includes Issue 13-01-309 LP Procedure Cancelled Because of VDA Not Being Charted)*

Tom Schneider, AFS-420, briefed that the working group has had several meetings and brought Flight Inspection onboard. The slide shows the results of the VDA Working Group meeting and the US-IFPP recommendations. The first slide shows design criteria in Order 8260.3 & policy in Order 8260.19. () Joshua Fenwick, Aero Nav Data, inquired if a flight inspection failed, would a redesign to increase the descent angle occur? Tom said that would be one option. John Collins, GA Pilot, inquired about the 0 degree angle in VDA. There was discussion on one manufacturer who had coding issues with using the zero, and this has been fixed. Brad Rush, AJV-3, added that this only affects approximately 120 procedures (out of well over 10,000) in the US NAS. A discussion followed with previous points restated from other meetings: i.e. VDA advisory only; ARINC 424 coding; data base suppliers coding “0” for the angle; publishing note “VDA N/A below MDA”; TPP changes; pilot guidance in AIM and IPH; coded value; etc. It was recommended these coding issues be brought up in the scheduled Database Manufacturers Forum scheduled for Thursday afternoon (5-1-2014).

Status: AFS-420 will continue to work this agenda item through the US-IFPP. Item Open [AFS-420 (US-IFPP)].

o. 12-02-303: Charting Computer Navigation Fixes (CNFs)
Kel Christianson, AFS-470, briefed the applicable AIM guidance has been published. The group agreed to close this issue.

Status: Issue CLOSED

p. 13-01-307: TDZE is Required by 91.175, THRE is Not
Kel Christianson, AFS-470, provided background on the issue, including a Bruce DeCleene, AFS-400, memo to address situation. A list of affected airports is posted on the AeroNav Products web site with associated TDZE. This list will be continually updated until all procedures are amended to restore TDZE values to the chart. Ted Thompson, Jeppesen, asked how this is progressing. Brad Rush, AJV-3, advised there is an implemented day forward-day back process. In the day back process, we are making the changes via P-NOTAM (200 to 500 per chart cycle). This is a very time consuming process and will take about a year

to complete. All day forward procedure development utilizes TDZE. Brad stated we are changing HATs & DAs, but not MDAs or visibility as previously agreed. Tom Schneider, AFS-420, said the policy criteria in Order's 8260.3B and 8260.19F has changed back to TDZE, and recommend closing this issue. Ted agreed.
Status: Issue CLOSED

q. 13-01-308: RNAV (GPS) Approach Procedures That Do Not Have an LNAV Minimum Line Should Indicate "Alternate NA".

Kel Christianson, AFS-470, provided background on the issue. Information changed in the AIM, and John Collins, GA pilot and submitter of this recommendation, is satisfied with the change and agreed this recommendation can be closed.

Status: Issue CLOSED

r. 13-01-310: Option "Pilot Must Have at Least the Textual Description of a SID/STAR in Possession" to Fly a SID or STAR

Tom Schneider, AFS-420, said this is just awaiting IPH release. Rick Dunham, AFS-420, advised the IPH is out for AFS-1 signature (two weeks). The group agreed this issue be closed.

Status: Issue CLOSED

s. 13-01-311: Terminal Arrival Areas

Kel Christianson, AFS-470, briefed that he worked closely with Rich Boll, NBAA, and they recreated AIM section 5-4-5 (text and figures), which will be published in July, 2014. This info will be provided to AFS-420 for the IPH. ( ) John Collins, GA Pilot, inquired if any thought was given to relocating the section within the AIM so as to not be associated only with RNAV. Kel responded not yet. The AFS-420 part (Order 8260.58) is still being reworked by TJ Nichols, AFS-420, and remains open.

Status: AFS-420 will continue to work the Order 8260.58 and IPH revisions. Item Open (AFS-420)

t. 13-02-312: Equipment Requirement Notes on Instrument Approach Procedures

Kel Christianson, AFS-470, discussed the possibility of an equipment requirements box on PBN approach charts. Once this happens, consideration will be given to apply this to conventional procedures for consistency, to show the most restrictive requirements needed to fly a given approach. Val Watson, AJV-3, remarked that the PBN Requirements box standard is years in the future, and that today we alert users to equipment requirements via the position (planview or briefing strip) of an equipment note; one position for equipment required for joining the approach and one for that required to fly the approach itself. Tom Schneider, AFS-420, stated "yes" and that is the confusing convention utilized for years. The charting convention is explained in the AIM, but most pilots do not carry an AIM to readily access when faced with this confusion. Ted Thompson, Jeppesen, said the location on the chart was intended to infer the meaning, but because the notes were sometimes repetitive, it became confusing. Kel said this is a work in progress on the PBN side, as a separate block will be used below title line and above notes section, telling exactly what is needed to fly the approach. The question is can it then be

brought over to the conventional side. Ted said this is mixing apples and oranges, taking PBN efforts over to conventional. Tom's concern is making PBN changes now, and then later making similar changes to conventional (same concept). Ted is all in favor of that idea if we do not make it more confusing. Mark Steinbicker, AFS-470, said we are trying (ongoing effort) to make charts more specific and consistent. A question for ACF is since there is an active group (i.e. PARC) in PBN charting how is this issue to be worked? Is it FAA internal (US-IFPP) or for a working group/action team to collaborate? Tom would not envision the US-IFPP working this issue. The ACF is currently working the agenda item, so once the charting aspect is established, AFS-420 would put requirements in Order 8260.19 to advise developer what to put on 8260-series Forms. Mark does not want the PBN work group distracted by this endeavor. Tom said the IOU on this item is AFS-410/470 from an OPS perspective and with reference to what pilots want to see. Tom asked how the group should approach this? Mark suggested that as there are folks interested in this issue in attendance at the ACF, a workgroup be formed. Tom provided a sign-up sheet for an Equipment Requirements Notes sub-group.

Status: Equipment Requirements sub-group chaired by AFS-410/470 will report results of meeting at the next ACF. Item Open (AFS-410/470).

u. 13-02-313: Chart Notes for Simultaneous Approaches

Bruce McGray, AFS-410, discussed Order JO 7110.65 requirement that simultaneous approaches can only be conducted where IAP's specifically authorize them to adjacent runways. ( ) The implementation of this requirement has resulted in extremely lengthy notes of questionable value to the user. The full ramifications of this can be seen in the chart note Atlanta as shown on slide 3. The group discussed various different ways to simplify note. Gary Fiske, AJV-8, said the current chart notes are too unwieldy. Several attendees voiced that they would like to eliminate this information from chart altogether, because in these locations there is always an operating ATC tower, information is transmitted over ATIS, and ATC informs pilots on initial contact. Though a consensus of the room was in favor of elimination of the notes, Gary advised caution, because when AT made changes to include RNAV approaches in parallel ops, there was a Safety Risk Management (SRM) panel formed to discuss necessary conditions. One requirement that came from the SRM panel was AT include in their directives that simultaneous operations are authorized where specifically stated on the approach plate. Since the SRM requires the note, he suggested it only be stated as "simultaneous approaches authorized", without the specific runway information listed. Gary is awaiting feedback to determine if this would undermine the intent of the SRM. At this time, he cannot allow the note to be removed from policy until he hears back. Tom Schneider, AFS-420, asked if there was any objection to reopening the SRMD and revisiting that option, and none were voiced by group. Do pilots really need to know this information from the approach plate, since they receive it from other sources? Gary said he was not against that, but wants to hear if a new panel will be required first. If a new panel is required, about 15 paragraphs need to be changed between the Order JO 7110.65, AIM, AIP, etc. from when first changed due to the notes. Gary voiced that he would prefer the path of least resistance, which would be the revised short note as he suggested. He offered to take an IOU to inform John Blair of outcome. Tom said the SRM was probably based on the fact that we were already placing these notes on the chart. Tom said our standpoint is if the pilot does not need it, we do not want to put it on the chart. Second option is to shorten up the note. Gary agrees, but is hamstrung with SRM. Group generally agreed, with follow-on discussion. Jim Arrighi, AJV-14, noted since this is a fairly current SRMD the change would have to go back to them. Tom agreed, but thought it would not be that difficult. Gary will find out what latitude the SRMD allows, including DCPs. John Blair will work issue for Flight Standards. Rick Dunham, AFS-420, discussed original purpose

of the notes, when these procedures were first developed. Mark Steinbicker, AFS-470, added notes are there for real operational use and also the legal/liability issue.

Status: AFS-410 and AJV-8 will continue to work issue. Item Open (AFS-410/AJV-8)

5. New Business:

a. 14-01-315 90 Degree Airway-to-RNAV-IAP Course Change Limitation; Arrival Holds

New issue presented by NBAA. John Kernaghan, NBAA, asked for justification as to why conventional arrivals can use a 120 degree turn for intercept and RNAV are limited to only 90 degree, despite the fact that RNAV systems are approved for and are used successfully to navigate the feeder segment of conventional approaches. He also voiced, with aid of the example shown, that often a holding pattern over the intersection course reversal seems to create more problems than solutions. NBAA would like it evaluated. Mark Steinbicker, AFS-470, ( ) discussed the last decade of operational experience/variability of path for wide angle of turn. Due to evidence of path repeatability, the angle was cut from 120 to 90 degrees. Mark is hesitant for a few specific instances to change the NAS standard. He feels there has been sufficient analysis done, that no more is needed, and suggests looking for other mitigations or techniques to alleviate concerns. There is also a waiver process that can be used in limited circumstances. Rick Dunham, AFS-420, advised this is an open agenda item at US-IFPP.

Status: AFS-420 (US-IFPP) will continue to work issue and advise ACF of decision. Item Open (AFS-420-US-IFPP)

b. 14-01-316 RNAV Fixes on Victor Airways Used for RNAV SIAPs.

New issue presented by NBAA. John Kernaghan, NBAA, discussed discontinuity of fixes, specifically the addition of a fix that appears to be (or perhaps should be) part of a conventional airway provided for ingress to an RNAV approach. Tom Schneider, AFS-420, ( ) demonstrated that Form 8260-2 does show it as part of the en route structure, though not part of that specific airway (not route make-up). Brad Rush, AJV-3, stated that the fix is not part of the legal description of the airway (discussion followed on airway fix requirements). Tom asked if something needs to be stipulated in Order JO 7400.2 to clarify which fixes are to be officially part of an airway. Brad thought maybe a clarification from the Airspace Regulations and ATC Procedures Group, AJV-11, on what constitutes a fix on an airway was needed. Tom said the problem is that the fix is on airway, but is not part of the legal description of the airway. The data base chooses from airway make-up fixes. Discussion followed on airways/fixes/make-up/coding/Federal Register. Gary Fiske, AJV-8, has agreed to take an IOU to present this issue to AJV-1. Tom inquired if guidance needs to be in Order JO 7400.2. John Moore, Jeppesen, said it appears this issue is being expanded beyond the bounds of the initial concern. Tom said we need guidance/clarity on the issue, and without representation from the Airspace Regulations and ATC Procedures Group in the room, we do not want to make changes to Order 8260.19.

Status: AJV-8 will take IOU to present issue to AJV-1 to gain input from them on how this should proceed. Item Open (AJV-8)

6. Next Meeting: ACF Meeting **14-02** is scheduled for **October 28-30, 2014** with ISI/Pragmatics, Inc., 1761 Business Center Drive Reston, VA 20190, as host. ACF meeting **15-**

01 is scheduled for **April 28-30, 2015** with ALPA, Inc., Herndon, VA as host. ACF **15-02** is scheduled for **October 27-29, 2015** with Lockheed Martin as host.

Please note the attached Office of Primary Responsibility (OPR) listing (attachment 1) for action items. It is requested that all OPRs provide the Chair, Tom Schneider, AFS-420, a written status update on open issues not later than October 10 - a reminder notice will be provided.

7. Attachments (2): 1. OPR/Action Listing
2. Attendance Listing

AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
OPEN AGENDA ITEMS FROM MEETING 14-01

OPR	AGENDA ITEM (ISSUE)	REQUIRED ACTION
AFS-470	**92-02-110:** (Cold Weather Altimetry)	Continue to develop a cold temperature implementation plan and update the AIM.
AJV-8	**02-01-241:** (Non-Radar Level and Climb-in-hold (CIH) Patterns	Track change to FAA Order JO 7210.3 DCP.
AFS-420	**07-01-270:** (Course Change Limitation Notes on IAPs)	Track Order 8260.19 update.
NBAA	**07-02-278:** (Advanced RNAV (FMS/GPS) Holding Patterns Defined by Leg Length)	NBAA will take back and discuss issue, to include off line discussions with FAA.
AFS-420 (US-IFPP)	**09-02-291:** (Straight-in Minimums NA at Night)	Continue to work issue through the US-IFPP and report.
AJV-8	**10-01-292:** (Removal of VCOA Option at Mountainous Airports)	Continue to track the change, and will advise on progress of DCP's.
AFS-470	**10-01-294:** (RNP SAAAR Intermediate Segment Length and ATC Intervention)	Monitor PARC actions and report.
AJV-3 (US-IFPP)	**11-02-298:** (Converging ILS Coding and Chart Naming Convention)	Continue to monitor US-IFPP activities as well as on-going AJV internal actions, and keep the ACF apprised of the issue status.
AFS-420 (US-IFPP)	**12-01-299:** (Loss of CAT D Line of Minima in Support of Circle-to-Land Operations)	Lead a working group and address the issue through the US-IFPP.
AFS-420 (US-IFPP)	**12-01-301:** (Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment, *also includes issue 13-01-309*)	Facilitate US-IFPP work group to address both issues.
AFS-420 (US-IFPP)	**13-01-311:** (Terminal Arrival Areas)	Continue to work the Order 8260.58.
AFS-410 and AFS-470	**13-02-312:** (Equipment Requirement Notes on Instrument Approach Procedures)	Equipment Requirements sub-group chaired by AFS-410/470 will report results of meeting at the next ACF.
AFS-410 and AJV-8	**13-02-313:** (Chart Notes for Simultaneous Approaches)	Work issue using ACF recommendations as desired direction.
AFS-420 (US-IFPP)	**14-01-315** 90 Degree Airway-to-RNAV-IAP Course Change Limitation; Arrival Holds	AFS-420 (US-IFPP) will continue to work issue and advise ACF of decision.
AJV-8	**14-01-316** RNAV Fixes on Victor Airways Used for RNAV SIAPs.	IOU to present issue to AJV-1 to gain input from them on how this should proceed.

ACF 14-01
INSTRUMENT PROCEDURES GROUP
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ACF 14-01
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AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
Meeting 14-02 – October 28, 2014

RECOMMENDATION DOCUMENT

FAA Control # 14-02-317

Subject: Use of GPS on Conventional (Ground-Based NAVAID) Instrument Approach Procedures (IAPs)

Background/Discussion:

FAA Advisory Circular AC 90-94 prescribed a means to use GPS on non-precision approach (NPA) procedures referred to as the "GPS Approach Overlay Program". Today, only the Phase III overlay approaches remain. These approaches contain "or GPS" in the procedure title and the use of GPS on these approaches is addressed by the Aeronautical Information Manual (AIM) in section 1-1-18 g. AC 90-94 was canceled by the FAA and replaced by AC 90-105. Since the AC's cancelation, there is no guidance furnished to pilots concerning the use of GPS to fly conventional, ground based NAVAID NPAs (e.g. VOR, VORTAC, VOR/DME, or NDB).

While the AIM states that the underlying NAVAID on IAPs titled "or GPS" need not be operational nor is the pilot required to actively monitor the NAVAID during the approach, the only guidance provided in the AIM concerning approaches **not titled** "or GPS" is furnished in paragraph 1-1-18e4:

4. As the production of stand-alone GPS approaches has progressed, many of the original overlay approaches have been replaced with stand-alone procedures specifically designed for use by GPS systems. A GPS approach overlay allows pilots to use GPS avionics under IFR for flying designated nonprecision instrument approach procedures, except LOC, LDA, and simplified directional facility (SDF) procedures. These procedures are identified by the name of the procedure and "or GPS" (for example, VOR/DME or GPS RWY15). Other previous types of overlays have either been converted to this format or replaced with stand-alone procedures. Only approaches contained in the current onboard navigation database are authorized. **The navigation database may contain information about non-overlay approach procedures that is intended to be used to enhance position orientation, generally by providing a map, while flying these approaches using conventional NAVAIDs**. This approach information should not be confused with a GPS overlay approach. (See the receiver operating manual, AFM, or AFM Supplement for details on how to identify these approaches in the navigation database.)

This AIM paragraph implies that GPS may be used to furnish a moving map that is beneficial for situational awareness; however, it states that the approach must be flown using the conventional NAVAIDs. This paragraph does not state what constitutes acceptable conventional NAVAIDs course guidance (e.g. CDI, bearing pointer, etc.) and whether it is acceptable to fly the approach using GPS while displaying acceptable course guidance.

In addition, paragraph 1-2-3a and Note #4 in AIM section 1-2-3, Use of Suitable Area Navigation (RNAV) Systems on Conventional Procedures and Routes states:

1. ***Use of a suitable RNAV system as a Substitute Means of Navigation*** when a Very-High Frequency (VHF) Omni-directional Range (VOR), Distance Measuring Equipment (DME), Tactical Air Navigation (TACAN), VOR/TACAN (VORTAC), VOR/DME, Non-directional Beacon (NDB), or compass locator facility including locator outer marker and locator middle marker ***is out-of-service*** (that is, the navigation aid (NAVAID) information is not available); ***an aircraft is not equipped with an Automatic Direction Finder (ADF) or DME; or the installed ADF or DME on an aircraft is not operational***. For example, if equipped with a suitable RNAV system, a pilot may hold over an out-of-service NDB

NOTE–
4. ***Pilots may not substitute for the NAVAID (for example, a VOR or NDB) providing lateral guidance for the final approach segment.*** This restriction does not refer to instrument approach procedures with "or GPS" in the title when using GPS or WAAS. These allowances do not apply to procedures that are identified as not authorized (NA) without exception by a NOTAM, as other conditions may still exist and result in a procedure not being available. For example, these allowances do not apply to a procedure associated with an expired or unsatisfactory flight inspection, or is based upon a recently decommissioned NAVAID.

Taken together, a conclusion can be drawn that GPS (or FMS systems incorporating an approach approved GPS sensor) may not be used as the primary navigation source to fly a VOR or an NDB approach and that lateral guidance must be furnished by the ground based NAVAID. Industry seeks clarification concerning what type of primary guidance must be displayed and followed when flying a conventional, ground-based NAVAID approach and any alternate displays (e.g. GPS) that are acceptable for use by FAA.

Recommendations:

An approach-capable GPS provides many advantages to instrument approach operations including decreased pilot workload. For many aircraft, it also provides vertical guidance to stabilize the final approach using a constant descent profile down to, but not below, the minimum descent altitude (MDA). NBAA strongly believes that these features should be available and usable when conducting conventional ground-based NAVAID approaches **that are not titled "or GPS".**

NBAA request that FAA Flight Standards publish in the AIM guidance necessary to satisfy the requirement to base primary course guidance on the ground-based NAVAID while still permitting the use of approach certified GPS receiver guidance to fly an instrument approach based on a ground-based NAVAID. As a starting point for discussion, such requirements ***could*** include:

1. Requirement that the ground based NAVAID approach be retrievable from the navigation database without modification.

2. Requirement that the ground-based NAVAID be operational & that the aircraft be equipped with an approved & operational navigation receiver applicable to the approach (e.g. VHF navigation receiver, ADF receiver).

3. Statement that it is acceptable to use an approach-certified GPS navigation receiver to fly a conventional NAVAID approach in the final approach segment provided that the pilot displays a source of lateral guidance for the conventional NAVAID. State what is acceptable for conventional NAVAID lateral guidance. Possible options for lateral guidance displays might include:
    - Display of a CDI for VOR navigation, or
    - Display of a bearing pointer for VOR or NDB navigation

4. Which approach types are excluded from using an approach-certified GPS to fly the approach in the final approach segment (e.g. LOC, LOC BC, LDA, and SDF).

5. Actions to take should a discrepancy exist between the lateral guidance furnished by the ground based NAVAID receiver and the approach-certified GPS navigation guidance.

Should FAA determine that GPS cannot be used for final approach lateral guidance on approaches that are not labeled “or GPS”, we request that FAA amend AIM paragraph 1-1-18e4 to clearly state that final approach guidance must be based on the display and use of the conventional NAVAID lateral guidance (e.g. CDI for VOR, bearing pointer for NDB).

Comments: The recommendation affects:

- Aeronautical Information Manual (AIM)

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AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
Meeting 14-02 – October 28, 2014

RECOMMENDATION DOCUMENT

FAA Control # 14-02-318

Subject: Charting LNAV Engagement Altitudes

Background/Discussion: As NEXTGEN progresses at an increased pace with the Optimization of Airspace and Procedures in the Metroplex (OAPM) implementations across the country, industry is seeing an unprecedented increase in the use of RNAV SIDs at busy airports. Additionally, ATC has begun using the new "Climb Via" clearance phraseology on these SIDs. This combination has highlighted a whole new set of issues for aircrews and ATC alike, in particular, charting issues that cause confusion in the cockpit. Recent discussions have spotlighted an inconsistency in the charting of LNAV Engagement Altitudes on SIDs. Issues in particular include:

1. Discrepancy of when LNAV engagement altitudes are presented on the plan view of both AeroNav Products and Jeppesen charts.
2. Inconsistency of how the chart planview designates a crossing altitude between charts at different airports of same manufacturer (i.e. AeroNav Products)
3. Inconsistency of how the chart planview designates an engagement altitude between manufacturers (AeroNav versus Jepp).

Examples will be provided as it is the best way to see the breadth of the problem, but in general some SIDs have them and some do not. In most cases they only contribute to chart clutter and no useful purpose (see attached charts). Additionally, they may be charted as "usable altitudes" such as "1800" or may show up as "less usable altitudes" such as "1861". It is possible that they are charted as "at", "at or below", or "at or above", but really serve no purpose other than to anchor the RNAV leg type. Also, Jepp has added a "climb to" on the planview (consistent with AeroNav products text) that may be confusing pilots that think it is an altitude restriction.

These inconsistencies have been showing up as ASRS/ASAP reports, complaints, and pilot deviations. Of the most recent errors, crews were leveling at the LNAV engagement altitude on new KOKC SIDs that are 500 ft. above the ground (a contributing factor could be that "Climb Via SID" clearance was issued instead of "Climb and Maintain"- the SID has no published constraints other than the LNAV engagement altitude.). Additionally, it has been shown that pilot knowledge of "LNAV engagement altitudes" is very low. In many cases, the designation is just ignored, producing an industry wide illusion of understanding. In fact, there appears to be very little published on the topic and the name alone is a misconception since a true "LNAV engagement altitude" varies by aircraft type and is designated by the manufacturer and certified by flight standards processes. There are also discussions occurring as to whether or not these LNAV engagement altitudes are "altitude constraints" at all and how they should be treated by ATC.

Some attached example procedures are:

KBNA(DANLS2), KLAX (HOLTZ9), KLGA (JUTES2), and KOKC(MUDDE1)

Additional examples can be found at:

KCLT (all SIDs), KDFW (AKUNA5), KIAH (MMUGS1), KBWI (TERPZ3), KABQ(ADYOS2), and KLAS(COWBY5)

Recommendations:
Brief research of Order 8260.46, Departure Procedure Program, and Order 8260.58, US Standard for PBN Instrument Procedure Design, has not shown much insight regarding the requirements of the altitude. The only reference discovered is a requirement that "LNAV engagement Altitude be at least 500 ft. above the ground."

1. FAA clearly define criteria requirements for the LNAV engagement altitude (or its appropriate designation).
2. Determine the need for charting and standards necessary that will prevent confusing interpretations.
3. The AIM, PCG and Instrument Procedures Handbook should be updated to incorporate the appropriate guidance necessary related to the LNAV engagement altitude.

Comments:

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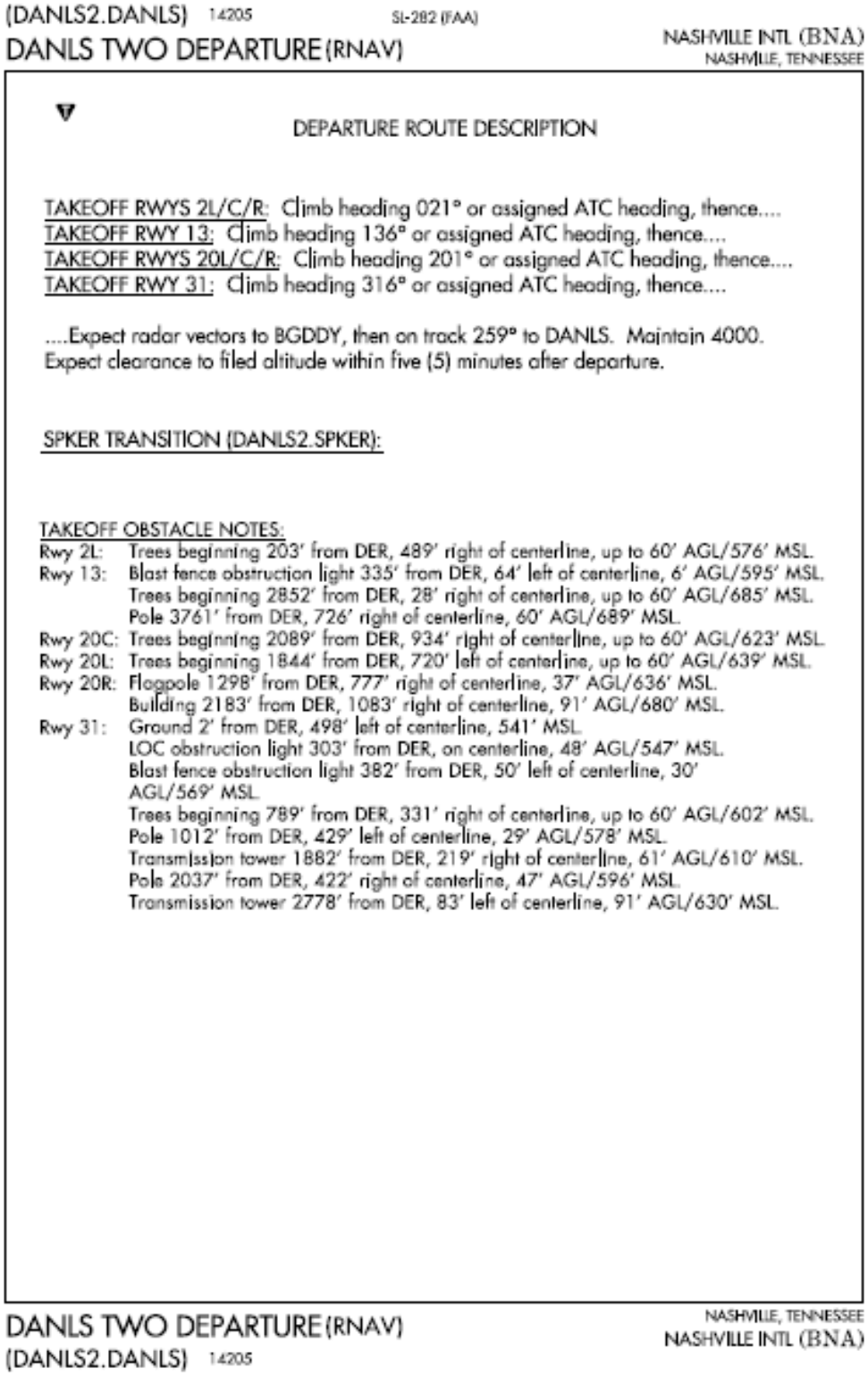
Date: 8OCT14

Attachment 1



(DANLS2.DANLS) 14205 SI-282 (FAA)

DANLS TWO DEPARTURE (RNAV)

NASHVILLE INTL (BNA)
NASHVILLE, TENNESSEE

DEPARTURE ROUTE DESCRIPTION

TAKEOFF RWYS 2L/C/R: Climb heading 021° or assigned ATC heading, thence....
TAKEOFF RWY 13: Climb heading 136° or assigned ATC heading, thence....
TAKEOFF RWYS 20L/C/R: Climb heading 201° or assigned ATC heading, thence....
TAKEOFF RWY 31: Climb heading 316° or assigned ATC heading, thence....

....Expect radar vectors to BGDDY, then on track 259° to DANLS. Maintain 4000. Expect clearance to filed altitude within five (5) minutes after departure.

SPKER TRANSITION (DANLS2.SPKER):

TAKEOFF OBSTACLE NOTES:
Rwy 2L: Trees beginning 203' from DER, 489' right of centerline, up to 60' AGL/576' MSL.
Rwy 13: Blast fence obstruction light 335' from DER, 64' left of centerline, 6' AGL/595' MSL.
Trees beginning 2852' from DER, 28' right of centerline, up to 60' AGL/685' MSL.
Pole 3761' from DER, 726' right of centerline, 60' AGL/689' MSL.
Rwy 20C: Trees beginning 2089' from DER, 934' right of centerline, up to 60' AGL/623' MSL.
Rwy 20L: Trees beginning 1844' from DER, 720' left of centerline, up to 60' AGL/639' MSL.
Rwy 20R: Flagpole 1298' from DER, 777' right of centerline, 37' AGL/636' MSL.
Building 2183' from DER, 1083' right of centerline, 91' AGL/680' MSL.
Rwy 31: Ground 2' from DER, 498' left of centerline, 541' MSL.
LOC obstruction light 303' from DER, on centerline, 48' AGL/547' MSL.
Blast fence obstruction light 382' from DER, 50' left of centerline, 30' AGL/569' MSL.
Trees beginning 789' from DER, 331' right of centerline, up to 60' AGL/602' MSL.
Pole 1012' from DER, 429' left of centerline, 29' AGL/578' MSL.
Transmission tower 1882' from DER, 219' right of centerline, 61' AGL/610' MSL.
Pole 2037' from DER, 422' right of centerline, 47' AGL/596' MSL.
Transmission tower 2778' from DER, 83' left of centerline, 91' AGL/630' MSL.

SE-1, 18 SEP 2014 to 16 OCT 2014

SE-1, 18 SEP 2014 to 16 OCT 2014

DANLS TWO DEPARTURE (RNAV)
(DANLS2.DANLS) 14205

NASHVILLE, TENNESSEE
NASHVILLE INTL (BNA)

Attachment 1 (continued)

KBNA/BNA
NASHVILLE INTL

JEPPESEN
18 JUL 14 (10-3A) Eff 24 Jul

NASHVILLE, TENN
RNAV SID

NASHVILLE Departure (R)	Apt Elev	Trans level: FL180 Trans alt: 18000'
119.35	599'	**1. RADAR required. 2. DME/DME/IRU or GPS required. 3. RNAV 1.** 4. For turbojet aircraft only. 5. Transponder code will be issued via PDC or Nashville Clearance Delivery. 6. If unable to accept climb rates, advise ATC on initial contact.

DANLS TWO RNAV DEPARTURE
(DANLS2.DANLS)

OBSTACLES
For TAKEOFF OBSTACLE NOTES see 10-3OB1.

This SID requires take-off minimums (for standard minimums, refer to airport chart): Rwys 2L/C/R, 13, 20L, 31: Standard (or lower than standard, if authorized) with a minimum climb of 500' per NM to 1100'. Rwys 20C/R: Standard (or lower than standard, if authorized) with a minimum climb of 500' per NM to 1300'.

Gnd speed-KT	75	100	150	200	250	300
500' per NM	625	833	1250	1667	2083	2500

RWY	INITIAL CLIMB
2L/C/R	Climb heading 021° or assigned ATC heading.
13	Climb heading 136° or assigned ATC heading.
20L/C/R	Climb heading 201° or assigned ATC heading.
31	Climb heading 316° or assigned ATC heading.

ROUTING

EXPECT RADAR vectors to BGDDY, then on track 259° to DANLS. MAINTAIN 4000'. EXPECT clearance to filed altitude within 5 minutes after departure.

CHANGES: Runway transitions, procedure renumbered.

Attachment 2

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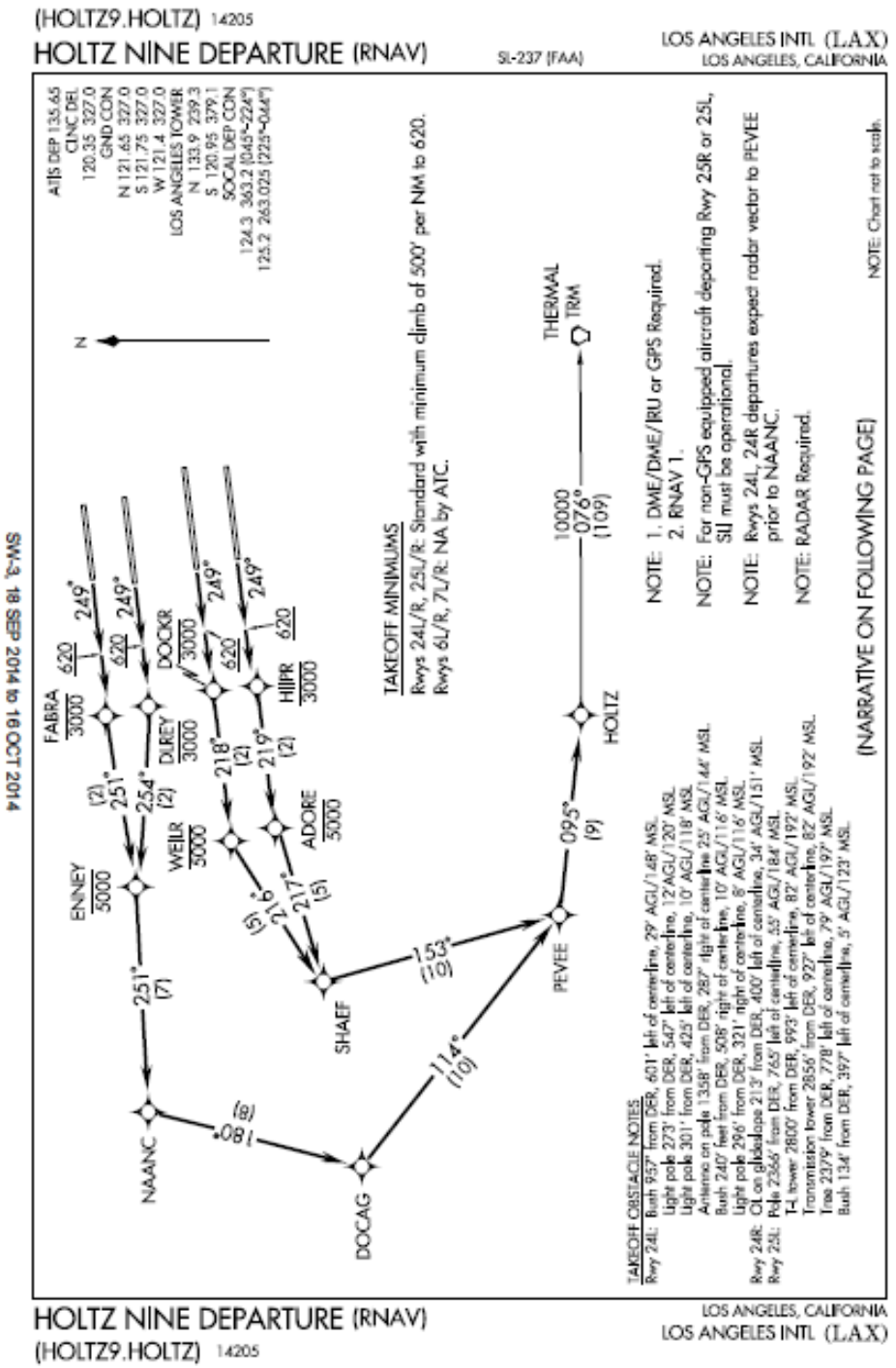
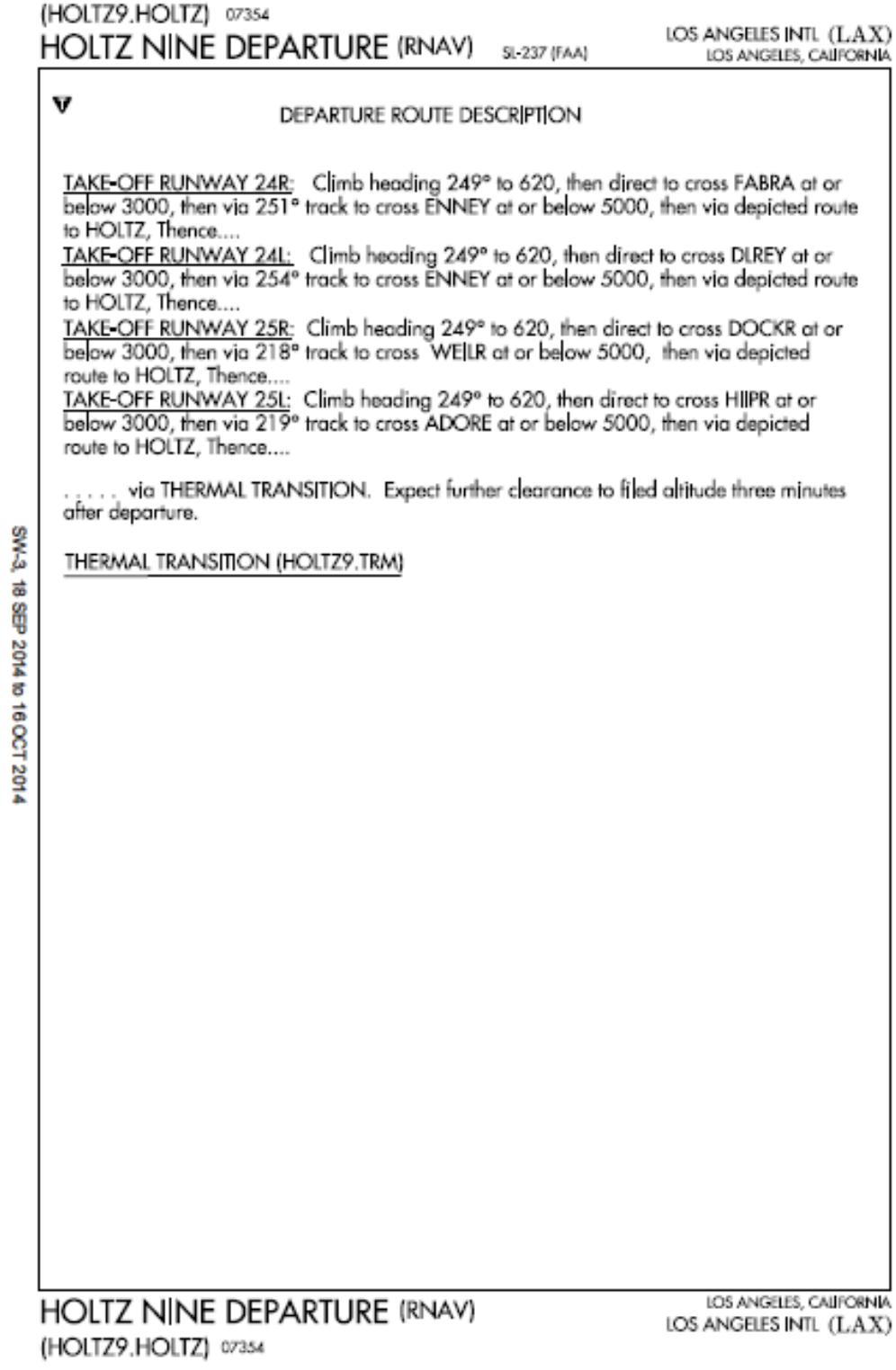


SW-3, 18 SEP 2014 to 16 OCT 2014

SW-3, 18SEP 2014 to 16 OCT 2014

Attachment 3



(HOLTZ9.HOLTZ) 07354

HOLTZ NINE DEPARTURE (RNAV) SI-237 (FAA)

LOS ANGELES INTL (LAX)
LOS ANGELES, CALIFORNIA

DEPARTURE ROUTE DESCRIPTION

TAKE-OFF RUNWAY 24R: Climb heading 249° to 620, then direct to cross FABRA at or below 3000, then via 251° track to cross ENNEY at or below 5000, then via depicted route to HOLTZ, Thence....

TAKE-OFF RUNWAY 24L: Climb heading 249° to 620, then direct to cross DLREY at or below 3000, then via 254° track to cross ENNEY at or below 5000, then via depicted route to HOLTZ, Thence....

TAKE-OFF RUNWAY 25R: Climb heading 249° to 620, then direct to cross DOCKR at or below 3000, then via 218° track to cross WEILR at or below 5000, then via depicted route to HOLTZ, Thence....

TAKE-OFF RUNWAY 25L: Climb heading 249° to 620, then direct to cross HIIPR at or below 3000, then via 219° track to cross ADORE at or below 5000, then via depicted route to HOLTZ, Thence....

. . . . . via THERMAL TRANSITION. Expect further clearance to filed altitude three minutes after departure.

THERMAL TRANSITION (HOLTZ9.TRM)

SW-3, 18 SEP 2014 to 16 OCT 2014

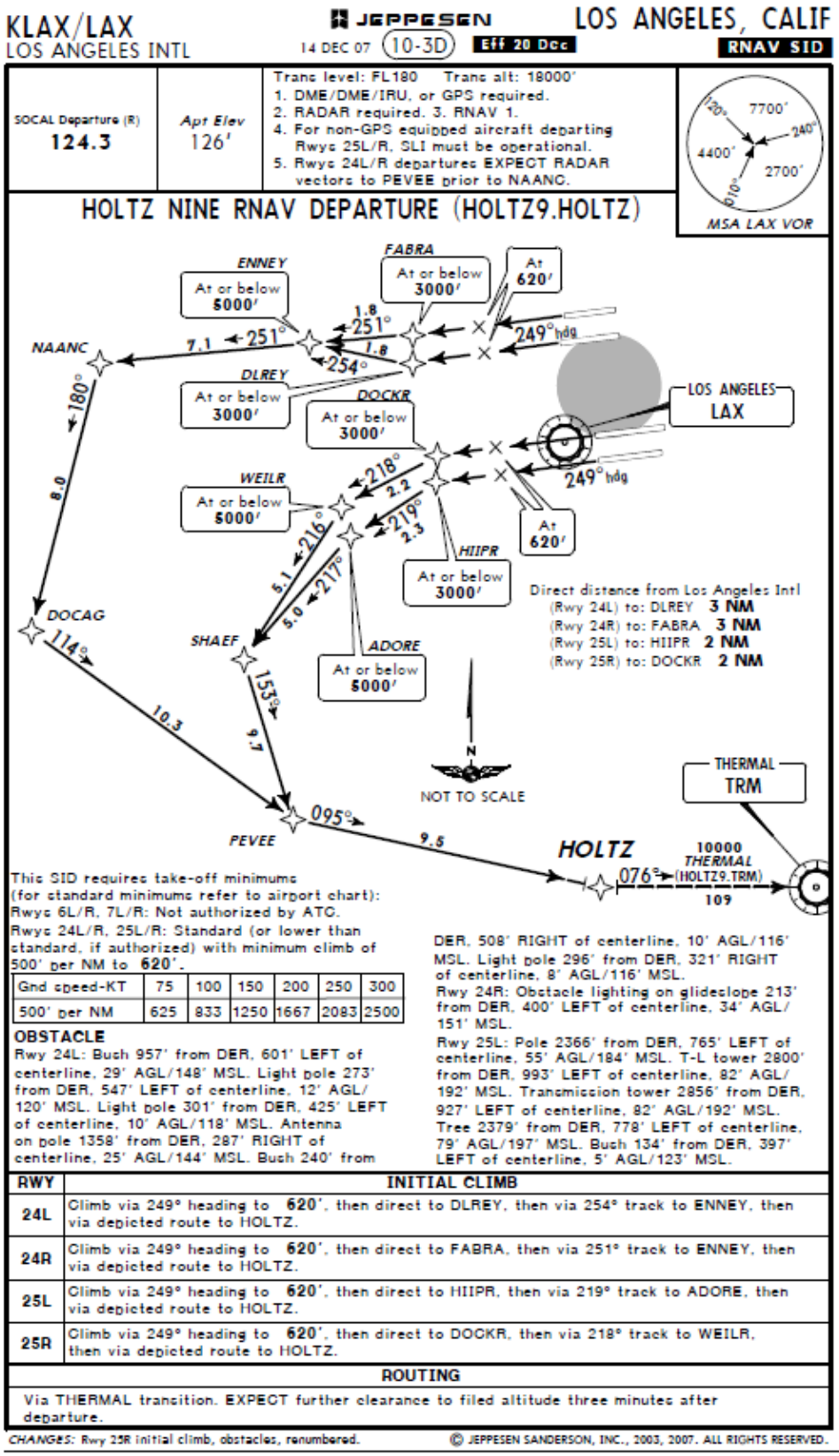
SW-3, 18 SEP 2014 to 16 OCT 2014

HOLTZ NINE DEPARTURE (RNAV)

LOS ANGELES, CALIFORNIA
LOS ANGELES INTL (LAX)

(HOLTZ9.HOLTZ) 07354

Attachment 3 (continued)



Attachment 4

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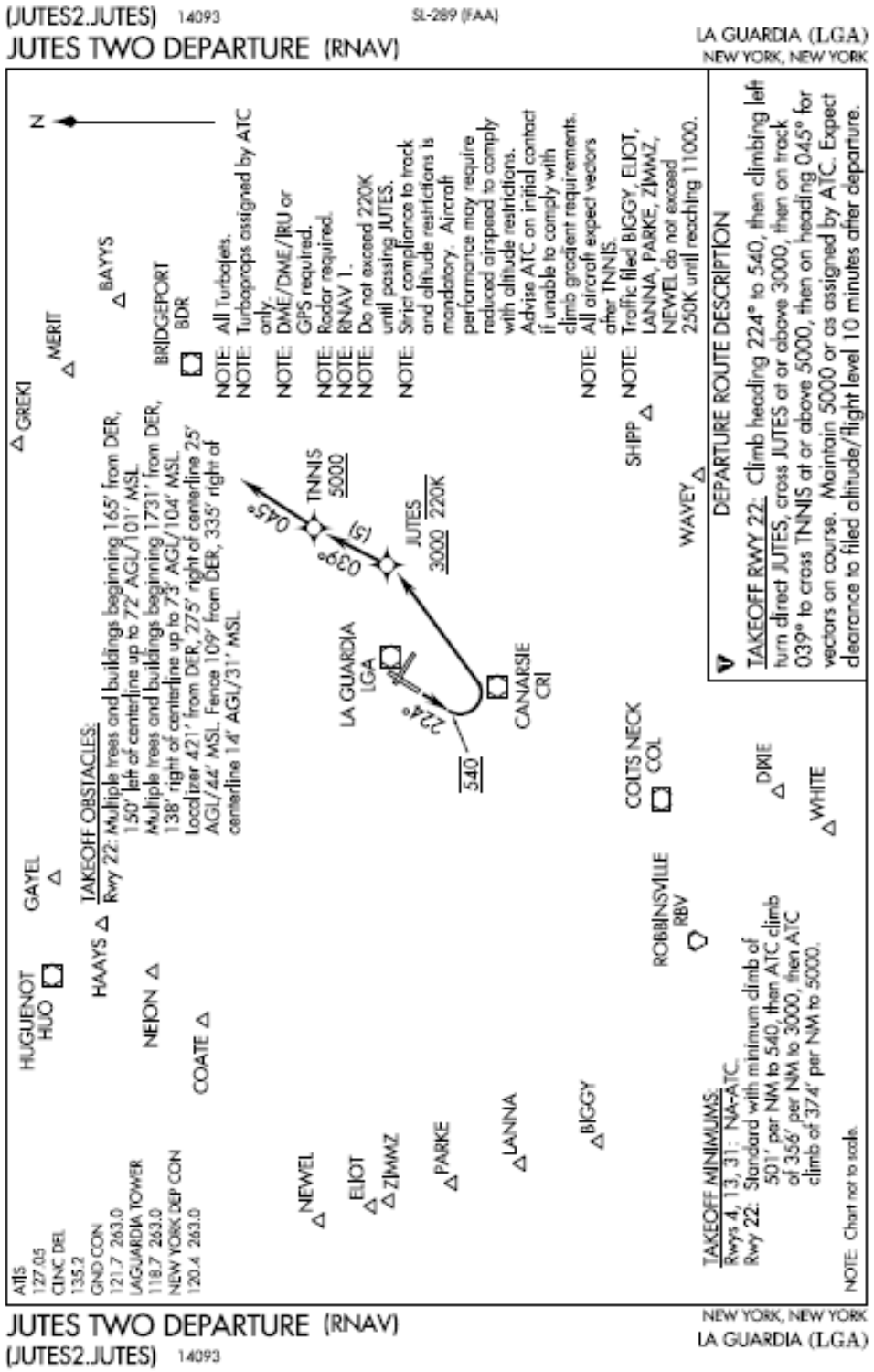


Attachment 5

Attachment 6

KLGA/LGA
LA GUARDIA

JEPPESEN NEW YORK, NY
14 SEP 12 (10-3B) RNAV SID

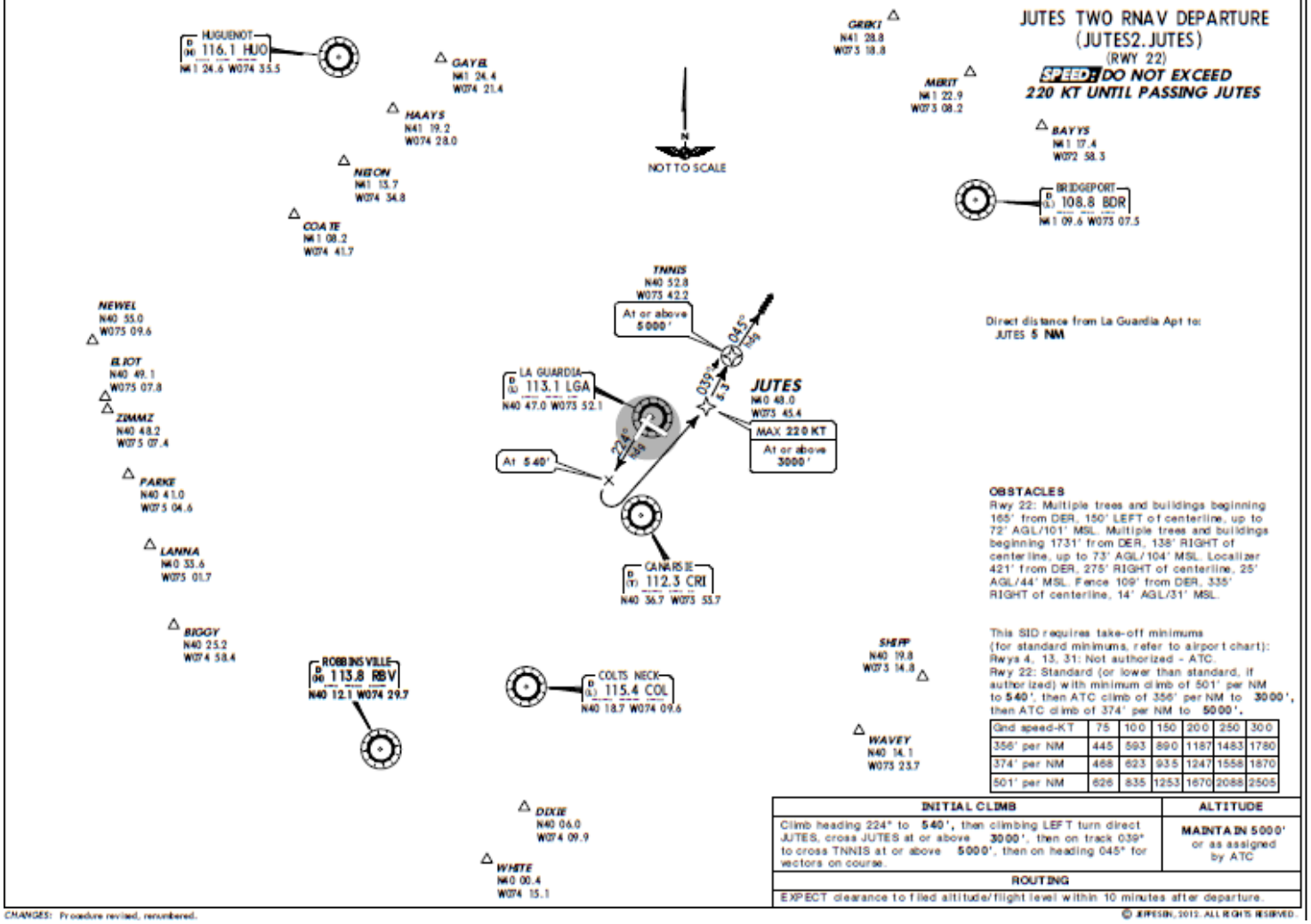
NEW YORK Departure (R)	Apt Elev	Trans level: FL180 Trans alt: 18000'
120.4	21'	**1. DME/DME/IRU or GPS required. 2. RNAV 1. 3. RADAR required.** 4. All turbojets. 5. Turboprops assigned by ATC only. 6. Traffic filed BIGGY, ELIOT, LANNA, NEWEL, PARKE, ZIMMZ: Do not exceed 250 KT until reaching 11000'.

6. Strict compliance to track and altitude restrictions is mandatory. Aircraft performance may require reduced airspeed to comply with altitude restrictions. Advise ATC on initial contact if unable to comply with climb gradient requirements.
7. All aircraft EXPECT vectors after TNNIS.

JUTES TWO RNAV DEPARTURE (JUTES2.JUTES)

(RWY 22)

SPEED: DO NOT EXCEED 220 KT UNTIL PASSING JUTES



Direct distance from La Guardia Apt to: JUTES **5 NM**

OBSTACLES
Rwy 22: Multiple trees and buildings beginning 165' from DER, 150' LEFT of centerline, up to 72' AGL/101' MSL. Multiple trees and buildings beginning 1731' from DER, 138' RIGHT of centerline, up to 73' AGL/104' MSL. Localizer 421' from DER, 275' RIGHT of centerline, 25' AGL/44' MSL. Fence 109' from DER, 335' RIGHT of centerline, 14' AGL/31' MSL.

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 4, 13, 31: Not authorized - ATC.
Rwy 22: Standard (or lower than standard, if authorized) with minimum climb of 501' per NM to **540'**, then ATC climb of 356' per NM to **3000'**, then ATC climb of 374' per NM to **5000'**.

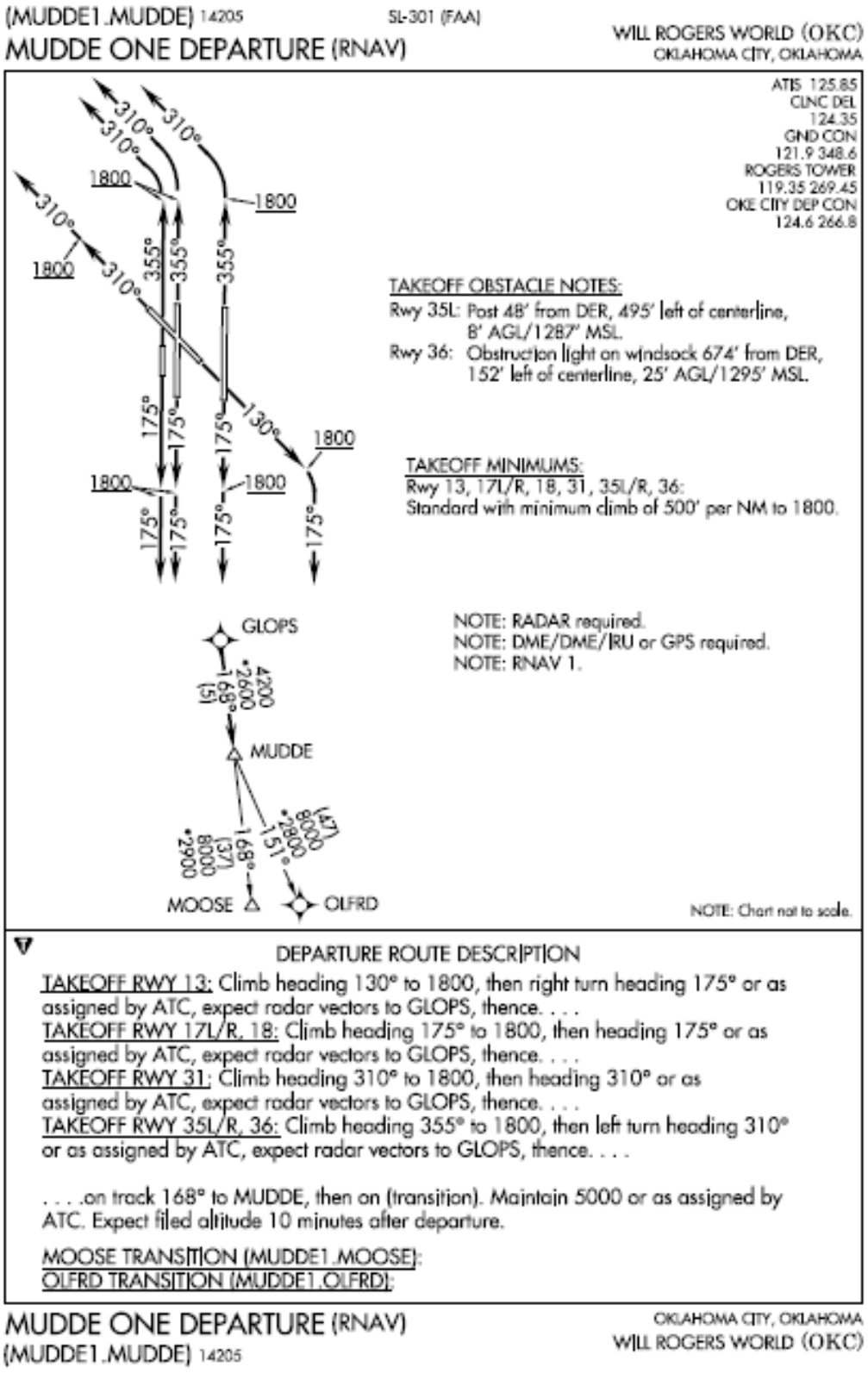
Gnd speed-KT	75	100	150	200	250	300
356' per NM	445	593	890	1187	1483	1780
374' per NM	468	623	935	1247	1558	1870
501' per NM	626	835	1253	1670	2088	2505

INITIAL CLIMB
Climb heading 224° to **540'**, then climbing LEFT turn direct JUTES, cross JUTES at or above **3000'**, then on track 039° to cross TNNIS at or above **5000'**, then on heading 045° for vectors on course.

ALTITUDE
MAINTAIN 5000' or as assigned by ATC

ROUTING
EXPECT clearance to filed altitude/flight level within 10 minutes after departure.

CHANGES: Procedure revised, renumbered.



Attachment 7

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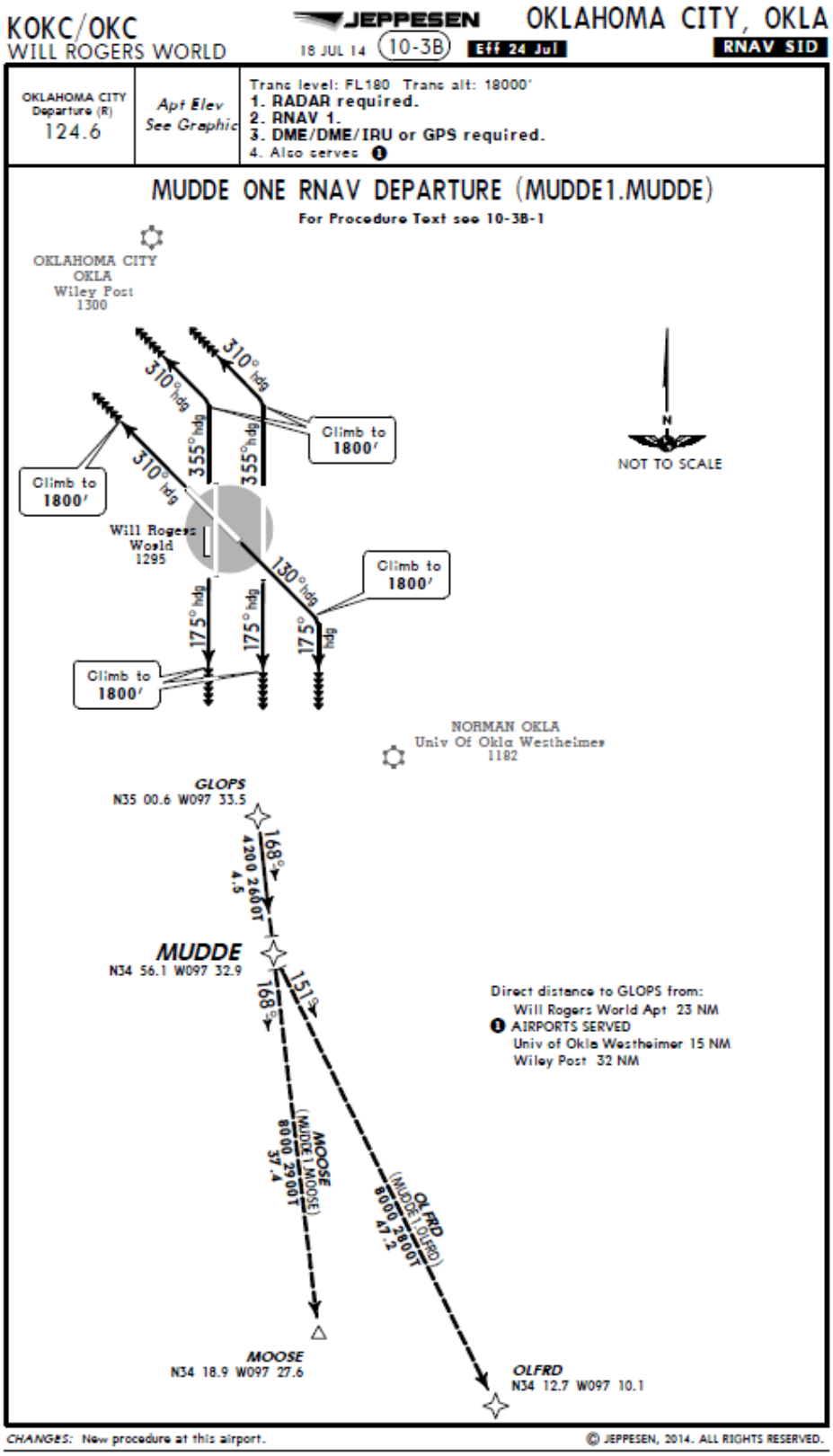


Attachment 8

KOKC/OKC
WILL ROGERS WORLD

JEPPESEN 18 JUL 14 (10-3B-1) Eff 24 Jul

OKLAHOMA CITY, OKLA
RNAV SID

MUDDE ONE RNAV DEPARTURE (MUDDE1.MUDDE)

For Procedure Graphic see 10-3B

PROCEDURE TEXT

This SID requires takeoff minimums
(for standard minimums, refer to airport chart):
UNIV OF OKLA WESTHEIMER:
Rwys 3, 17, 21, 35: Standard (or lower than standard, if authorized) with minimum climb of 500' per NM to 1700'.
WILEY POST: Rwys 13, 17L/R, 31, 35L/R: Standard (or lower than standard, if authorized) with minimum climb of 500' per NM to 2100'.
WILL ROGERS WORLD:
Rwys 13, 17L/R, 18, 31, 35L/R, 36: Standard (or lower than standard, if authorized) with minimum climb of 500' per NM to 1800'.

Gnd speed-KT	75	100	150	200	250	300
500' per NM	625	833	1250	1667	2083	2500

OBSTACLE
For TAKEOFF OBSTACLE NOTES see 10-3OB1.

AIRPORT	INITIAL CLIMB
UNIV OF OKLA WESTHEIMER	**Rwy 3:** Climb on heading 031° to 1700', then LEFT turn heading 355° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwy 17: Climb on heading 175° to 1700', then heading 175° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwy 21: Climb on heading 211° to 1700', then LEFT turn heading 175° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwy 35: Climb on heading 355° to 1700', then heading 355° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
WILEY POST	**Rwy 13:** Climb heading 130° to 1800', then RIGHT turn heading 200° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwys 17L/R: Climb on heading 175° to 1800', then RIGHT turn heading 200° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwy 31: Climb on heading 310° to 1800', then RIGHT turn heading 335° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwys 35L/R: Climb on heading 355° to 1800', then LEFT turn heading 335° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
ROUTING	
From GLOPS on track 168° to MUDDE. Then on transition. MAINTAIN 3000' or as assigned by ATC. EXPECT filed altitude 10 minutes after departure.	

AIRPORT	INITIAL CLIMB
WILL ROGERS WORLD	**Rwy 13:** Climb heading 130° to 1800', then RIGHT turn heading 175° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwys 17L/R, 18: Climb heading 175° to 1800', then heading 175° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwy 31: Climb heading 310° to 1800', then heading 310° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
	Rwys 35L/R, 36: Climb heading 355° to 1800', then LEFT turn heading 310° or as assigned by ATC. EXPECT RADAR vectors to GLOPS.
ROUTING	
From GLOPS on track 168° to MUDDE. Then on transition. MAINTAIN 5000' or as assigned by ATC. EXPECT filed altitude 10 minutes after departure.	

CHANGES: New procedure at this airport.

Attachment 8 (continued)

Charting Group

Government/Industry Aeronautical Charting Forum (ACF)
Meeting 14-02

October 28 – 30, 2014

Pragmatics, Inc.

1761 Business Center Drive
Reston, VA 20190

CHARTING GROUP AGENDA

I. OPENING REMARKS

II. REVIEW MINUTES OF LAST MEETING, ACF 14-01

III. AGENDA APPROVAL

IV. PRESENTATIONS, ACF WORKING GROUP REPORTS, ACF PROJECT REPORTS

ICAO / IFPP Committee Report	FAA / Mike Webb
PARC PBN Procedure Naming & Charting	FAA / Mike Webb
Airport GIS and FAA Order 5010.4A Update	FAA / Dr. Michael McNerney
Discontinuation of VOR Services	FAA / Rowena Mendez
National Route Strategy / PBN Implementation Process FAA Order 7100.41	FAA / Robert Novia (Sharon Abhalter) FAA / Bruce Kinsler (Sharon Abhalter)
Revision to FAA Order 8400.9, Runway Selection and Use Plan	FAA / John Blair
VFR Chart Print Schedule Realignment and Synchronization	FAA / Ron Haag

V. OUTSTANDING CHARTING TOPICS

Forum Number	Description Summary	Submitter
05-02-179	Attention All-users Page for Simultaneous, Parallel RNAV Departures & PRM Approaches **Status:** Kel Christianson, FAA/AFS-470 and Tom Schneider, FAA/AFS-420	FAA/AFS
07-01-195	Charting & A/FD Information Re: Class E Surface Areas **Status:** Paul Gallant, FAA/AJV-11, Brad Rush, FAA/AJV-344, Valerie Watson, FAA/AJV-344, and Paul Eure, FAA/AVJ-113	NBAA
09-01-214	Low Visibility Operations/SMGCS (LVO/SMGCS) Taxi Charts (*Previously titled as SMGCS Taxi Charts*) **Status:** Bruce McGray, FAA/AFS-410	FAA
11-01-238	Aerobatic Area Symbols on VFR Sectional Chart **Status:** Mike Wallin, FAA/AJV-211	FAA Mark Payne
13-01-260	Inclusion of Metering Frequency, 133.57, to MSP Airport Diagram – FAA AL 264 **Status:** Valerie Watson, FAA/AJV-344	Steve Perry Delta Air Lines
13-01-261	Alaska Ground Based Transceivers (GBT) Locations **Status:** Valerie Watson, FAA/AJV-344 and Bob Carlson, FAA/AJV-322	Jim Hill FAA/AJM-2323
13-01-262	Airport Facility Directory (A/FD) Depiction of Traffic Pattern Altitudes **Status:** TBD**,** AIM/NFDC	Randy Coller Michigan DOT
13-01-264	Flight Path Angle (FPA) on STAR Charts with Published Vertical Profiles **Status:** Kel Christianson, FAA/AFS-470	Kevin Allen US Airways
13-01-266	Standardized Depiction of Altitude Restrictions on Bottom, Top and Maintain Altitudes on Standard Terminal Arrival (STAR) and Standard Instrument Departures (SIDs) **Status:** Jim Arrighi, FAA/AJV-141, Valerie Watson, FAA/AJV-344, Tom Schneider, FAA/AFS-420	Jim Arrighi FAA/AJV-141
13-01-267	Addition of ATC Radar Telephone Numbers in FAA A/FD **Status:** Gary Fiske, FAA/AJV-822	John Lindsay US Citizen
13-01-268	Making Alternate Missed Approach Text Accessible to ATC **Status:** Gary Fiske, FAA/AJV-822	Rich Boll NBAA

Forum Number	Description Summary	Submitter
13-01-270	Step Down Fix Chart Notes **Status:** Tom Schneider, FAA/AFS-420 and Kel Christianson, FAA/AFS-470	Kevin Bridges FAA/AIR-130
13-02-273	Publication of Diverse Vector Areas (DVAs) **Status:** Tom Schneider, AFS-420 and Bruce McGray AFS-410	Richard Boll, II NBAA
14-01-274	Solar Power Plant Ocular Hazard Symbol on Aeronautical Charts **Briefer:** Ron Haag, FAA/AJV-321, Melissa McCaffrey, AOPA	FAA Western Services Center Operations Support Group
14-01-275	Charting Speed Limited Areas on Instrument Approach Plates **Briefer:** Gary Fiske, FAA/AJV-822	Bennet E. Taber Dreamline Aviation, LLC
14-01-276	Removal of Non-Alaska Facility Information from Alaska Supplement **Briefer:** Valerie Watson, FAA/AJV-344, Melissa McCaffrey, AOPA	Marshall G. Severson FAA
14-01-277	Discontinuation of World Aeronautical Chart (WAC) **Briefer:** Ron Haag, FAA/AJV-321, Melissa McCaffrey, AOPA	FAA AeroNav Products
14-01-278	Alaska Designated Common Traffic Advisory Frequency Area Chart Depictions **Briefer:** Ron Haag, FAA/AJV-321, Mike Yorke, FAA/AAL-03	Brian E. Staurseth FAA
14-01-279	Naming of FAA Certified, National Disseminated AWOS-3 Systems on Private Use Airports **Briefer:** Regina H. Sabatini, FAA/AJV-22, Valerie Watson, FAA/AJV-344, Brad Rush, FAA/AJV-344	Regina H. Sabatini FAA

VI. NEW CHARTING TOPICS

Forum Number	Description	Submitter
14-02-280	MEA Usage on SIDs **Briefer:** John Collins	John Collins GA Pilot
14-02-281	Publish Electronic Form of MVA Charts **Briefer:** John Collins	John Collins GA Pilot
14-02-282	VASI PAPI Differences **Briefer:** John Collins	John Collins GA Pilot
14-02-283	Charting of Transmission Lines on VFR Charts **Briefer:** TBD, USCG	Christopher Hill USCG
14-02-284	DME Facilities – Charting and MAGVAR Issues **Briefer:** Rowena Mendez, FAA/AJM-324	Leo Eldredge Tetra Tech
14-02-285	Charting of Arctic UAS Permanent Areas **Briefer:** Cliff Sweatte, FAA/AFS-80	Cliff Sweatte FAA/AFS-80
14-02-286	Airport Diagram Symbol for Non-Standard Runway Holding Position Marking in Conjunction with a Hot Spot **Briefer:** Valerie Watson, FAA/AJV-344	Chris Diggons FAA/AJI-144
14-02-287	Update Terminal Enroute Control (TEC) Route Descriptions to use Waypoints **Briefer:** John Collins, GA Pilot	John Collins GA Pilot
14-02-288	Airport Reference Codes in the AFD **Briefer**: Khalis Kodsi, FAA/AAS-100	Khalil Kodsi - AAS-100 Bryant Welch - AFS-410 FAA

V. NEXT MEETINGS

ACF 15-01 is scheduled for April 28-30, 2015, tentatively hosted by ALPA, Herndon, VA.

ACF 15-02 is scheduled for October 27-29, 2015, hosted by Lockheed Martin, Crystal City, VA.

Government/Industry Aeronautical Charting Forum (ACF)
Meeting 14-01
April 30 – May 1, 2014
MITRE
McLean, VA 20172

CHARTING GROUP MINUTES

I. Opening Remarks

The Aeronautical Charting Forum (ACF) was hosted by The MITRE Corporation at their location in McLean, VA. Valerie Watson, AJV-3, opened the forum on Wednesday, April 30. Valerie acknowledged the ACF Co-chair Tom Schneider, AFS-420, who presided over the Instrument Procedures Group (IPG) portion of the Forum. Valerie also expressed appreciation to MITRE and MITRE representative Al Herndon for hosting the 14-01 ACF. Al Herndon welcomed the ACF participants to MITRE.

II. Review Minutes of Last Meeting, ACF 13-02

The minutes from the 13-02 ACF meeting were distributed electronically last fall via the AeroNav ACF website: http://www.faa.gov/air_traffic/flight_info/aeronav/acf/. The minutes were accepted as submitted with no changes or corrections.

III. Agenda Approval

The agenda for the 14-01 meeting was accepted as presented.

IV. Change in ACF-Charting Group URL

Valerie Watson, AJV-3, briefed the audience of the change in the web address for the ACF - Charting Group. The new url is as follows:

http://www.faa.gov/air_traffic/flight_info/aeronav/acf/

Please update your browser's book marks accordingly as the old address will not have a redirect link to the new URL after 1 June 2014.

V. Presentations, ACF Working Group Reports and ACF Project Reports

ICAO/IFPP Committee Report

Mike Webb, AFS-420 and U.S. member of the ICAO Instrument Flight Procedures Panel (IFPP), provided an update on the ICAO/IFPP Committee activities and an overview of the key topics of the recent spring meeting of the ICAO/IFPP Integration Working Group (IWG) held in Dubai, UAE.

Mike reported that there has been resolution of the IACO State letter regarding Performance Based Navigation (PBN) procedure naming conventions. ICAO will change the PBN procedure title from RNAV to RNP by 2022. The US is going to retain RNAV in future PBN procedure titles. That is the only difference that the US will file and plans are to adopt all other ICAO PBN charting recommendations.

George Bland, USAF, asked if the ICAO Aeronautical Charting Manual Doc 8697 will be updated with the PBN charting standards by 2022. Mike stated that the manual will not be updated until all of the PBN details have been finalized.

Mike then presented an overview of Performance Based Operations Aviation Rulemaking Committee (PARC) PBN Procedure Naming Action Team activities since the last ACF. The team focus is on determining recommendations to present to the PARC regarding an implementation strategy. In order to do this, the group has come up with several prototype approach plates showing the myriad of possibilities with regard to showing a single NAVSPEC vs multiple NAVSPECS on a single procedure. The prototypes also depict a PBN requirements box presented in different ways and in different locations on the chart that are still under consideration by the Action Team. A sampling of prototypes was presented to the group.

Kevin Bridges, AIR-131, stated that if multiple NAVSPECS are going to be used on a single procedure, the whole procedure could be removed from the pilot's database if unable to comply with any part of the PBN requirements for that procedure. Martin Zillig, Lido, stated that if portions of the procedure are unusable, the FMS may be able to remove just the transitions that are not compatible.

Rob Goodson, NGA, asked if other chart producers will have to comply with the charting requirements for PBN. Ted Thompson, Jeppesen, stated that the PBN information that is on the source document will be charted, however, the details of *how* the information is presented on the chart could differ.

Mike stated that by the next ACF he expects the PARC to have a set of recommendations ready to present to the FAA.

ACTION: Mike Webb, AFS-420, will provide an update at the next ACF.

Airport Surveying – GIS Program

Dr. Mike McNerney, AAS-100, provided an update on the progress made on the FAA's Airports GIS program. Since the last ACF, AAS-100 has continued to make improvements on the electronic Airport Layout Plans (ALP) with the goal being to provide a custom printed ALP. Dr. McNerney reported that testing of the Modification of Standards tool has begun with the ASW and ASO regions. He also reported that improvements have continued to the repository for aerial photography on the cloud server and the number of ortho-rectified aerial imaging continues to grow.

A new feature highlighted by Dr. McNerney is the Airport 20:1 Penetration Visualization Tool. This new tool will be expanded in the future to other obstacle penetration surfaces.

Dr. McNerney also reported that the planned data migration from NASR into Airports GIS is to take place in September 2015. Once that migration takes place, Airports GIS will be the authoritative source for airport data.

Terry Rhea, AAS-100, then provided a demonstration of the Surface Analysis and Visualization Tool (SAVT). SAVT allows users to analyze, review, edit, and mitigate surface penetrations. The tool utilizes Google Earth images and enables the user to zoom in and look at the obstacle surface and see the objects attribute data. The data is then compiled into a Penetration Report which can be used by the airport to generate a compliance plan detailing how the airport plans to mitigate the penetrations. A mitigation summary report can be viewed to check on the status of all objects in the penetration report. Once the mitigation report has been submitted by the airport, the flight procedures office can see the report and the mitigation actions that have been taken.

Kel Christianson, AFS-470, inquired as to the various sources of obstacle data being used. Dr McNerney stated that currently the tool is pulling obstacle data from AirNav, FAA's Digital Obstacle File, airport surveys, etc. However, they are working toward having a single authoritative source for all obstacle data.

Bob Lamond, NBAA, praised the new tool. Bob suggested that that a column be added for object type (antenna, water tower, etc.,) on the penetration report. He also stated that he would like to see this made publicly available as soon as possible. Dr. McNerney stated that they are in the process of making the tool available primarily to airports. Eventually it will be available for public use as read-only. Bob expressed concern about the server limitations and how that will affect public access. Brad Rush, AJV-3, stated that, based on his interaction with the Advisory and Rulemaking Committee (RTCA), the FAA will release this data, and yes, it will be available to be viewed by the public. The server limitations are expected to be resolved soon.

Rob Goodson, NGA, inquired as to the datum being used in the database. Dr. McNerney was not sure about the datum and said that he would get that answer.

Valerie Watson, AJV-3, asked how the airport data will be verified. Dr. McNerney stated that once the database is established as the authoritative source, airports will be required to enter their data into the website and the airport will be the source. Valerie asked if there are requirements for the airports to verify the originally imported airport data from NASR, much of which is old. Dr. McNerney said that the data will be sent to the airports, they will be required to verify the data, and then submit it with a digital signature.

Post meeting Update. "The deployment to the Eastern Service Center has been put on hold because of user issues with the RAPT teams. A version is expected to be released to the Eastern Service Area airports that only allows the Visualization and Analysis portion but no pushing of data to the RAPT within 30 days. An expected test of 50 airports in the Eastern Service Area with pushing of mitigation plans to the RAPT in 60-120 days is anticipated. All schedules are very preliminary."

ACTION: Dr. Mike McNerney, AAS-100, will provide an update at the next ACF.

Discontinuation of VOR Services

Rowena Mendez, AJM-324, provided an update on the progress made since the last ACF. Rowena stated that the plan includes the transition from 967 VORs to 500 VORs by a revised target date of FY2025. She stated that currently AJM-324 is focused on collaborating with the Tactical Operations Committee (TOC), working with DoD to determine which VORs they can sanction the discontinuance of and collaborating with AJV on how to integrate the VOR MON plan with the PBN program, the National Route Plan, and with Flight Procedures and Charting to insure that NAS operations are not compromised.

Gary Fiske, AJV-822, asked how the changes to the NAS infrastructure will be funded. Rowena responded that the program is currently focused on analyzing the overall technical and operational impact of the discontinuation of VOR services. Once the analytical work is completed, her office can start work on determining the associated costs.

John Belk, AJV-141, asked if there is an expectation that there will be RNAV replacements for conventional procedures as part of this program. He stated that there is not enough funding for that to be the solution. Rowena responded that currently, her office is only looking at the future costs of the discontinuation and that current VOR discontinuations based on PBN replacement procedures are not currently part of the program.

Mike McGinnis, American Airlines, asked if the large-scale Metroplex redesigns currently underway will help with this transition. Rowena responded that yes, they will help because they rely more heavily on PBN. Gary supported this and stated that metroplex projects are not designing routes that are predicated on NAVAIDs because they are aware of this future transition.

Bob Lamond, NBAA, stated that he is hopeful the plan is to retain sufficient VORs to ensure safety. He stated that he had submitted concerns to the FAA which have not been addressed, and VORs are already beginning to be turned off.

Valerie Watson, AJV-3, commented that there needs to be a greater understanding of the future usage of standalone DME facilities. The charting offices have a lot of questions about how to publish standalone DME facility data. Is there an associated frequency? Morse code? Associated RCOs? Rowena responded that they don't know all the answers yet. Right now, DMEs are still defined by the associated VORs. Valerie stated that for now, AJV and AIM will not publish standalone DMEs and will continue to leave them in the database as a VOR/DME with a remark that the associated VOR is out of service. Valerie asked Rowena if she could collaborate with her office and AIM to help define the database & charting requirements for standalone DMEs. Rowena agreed that when she has more answers, she will communicate them.

Gary asked if standalone DMEs will be left in the same location where the DME had been previously paired with a VOR or if the standalone DME could be relocated. Rowena stated that yes, relocation is a possibility and may be an opportunity for the FAA to eliminate some of its leases and save money.

Rowena stated that the Final Investment Decision will be made in FY 2015. Then the VOR Discontinuation Plan will start to take shape. Rowena is looking for ideas on how the discontinuation process can be made more efficient. She said that her office will continue to collaborate with all the stakeholders to identify requirements and address the concerns.

ACTION: Rowena Mendez, AJM-324, will provide an update at the next ACF.

PBN Implementation Process Order 7100.41

Dawn Ramirez, AJV-121, briefed the topic as a follow up to the Route Planning Briefing given at ACF 13-02. Dawn stated that there is change in focus on the National Route Plan from what was presented previously. There is a new PBN Implementation Process Joint Order 7100.41 which relates to the development and implementation process for PBN procedures and routes. The details of the new implementation process are outlined in the presentation slides.

Bruce McGray, AFS-410, asked who is coordinating these changes with the VOR MON program office? Bruce stated the need to coordinate all the stakeholders for better collaboration. Dawn agreed that there needs to be more coordination in the future between the PBN office and the VOR MON office.

ACTION: Dawn Ramirez, AJV-121, will provide an update at the next ACF.

VI. Outstanding Charting Topics

05-02-179 Attention All-users Page for Simultaneous, Parallel RNAV Departures & PRM Approaches

Valerie Watson, AJV-3, briefed the topic. Valerie reported that AAUPs for approaches have been published. She also reported that the charting specifications are in place for the publication of RNAV Departure AAUPs, though none have yet appeared in the National Flight Data Digest (NFDD) for publication.

Kel Christianson, AFS-470, reported that the RNAV Departure AAUP guidance will be in FAA Order 8260.46 and the changes are to be published in May 2014. The content is the same as the original Order 8400.AAUP and formalizes the responsibilities for the creation, maintenance and publication of AAUPs. Kel added that no requests to publish RNAV Departure AAUPs have been received to date.

Tom Schneider, AFS-420, reported that the Notice for AAUPs for approaches will run out in June 2014. There will be a gap in the guidance until the approach guidance is published in FAA Order 8200.19, which is set to be published in February 2015.

Valerie stated that this issue shall remain open until the final guidance is published in FAA Orders 8200.19 and 8260.46.

STATUS: OPEN

ACTION: Kel Christianson, AFS-470, and Tom Schneider, AFS-420, to report on progress of the publication of the Orders.

07-01-195 Charting & AFD Information Re: Class E Surface Areas

Paul Gallant, AJV-11, was not in attendance and no status report was submitted on the progress made on the updates to the AIM and FAA Order JO 7400.2.

Lynette Jamison, AJR-B1, suggested that Paul Eure, AJV-11, be briefed on this issue and request his assistance in moving this issue forward.

Bob Lamond, NBAA, speaking on behalf of the original submitter of the Recommendation Document, expressed his dissatisfaction with the FAA for not yet having published the airspace that was agreed upon and finishing the work required to close this item. Bob requested that the issue be elevated to a higher management level within the FAA.

STATUS: OPEN

ACTION: Brad Rush, AJV-3, will contact AJV-11 to elevate this issue to a higher FAA management level and report at the next ACF.

ACTION: Valerie Watson, AJV-3, will contact Paul Gallant and Paul Eure, AJV-11, to try to get this issue moving forward and will report at the next ACF.

ACTION: Paul Gallant, AJV-11, to provide an update at the next ACF.

09-01-214 Low Visibility Operations/SMGCS (LVO/SMGCS) Taxi Charts (*Previously titled as SMGCS Taxi Charts)*

Bruce McGray, AFS-410, briefed the topic. Bruce stated that work has been done to raise the awareness of LVO/SMGCS operations in the US. ICAO harmonization efforts have also continued regarding US and International rules and procedures.

Bruce stated that the FAA is considering alternatives for Enhanced Flight Vision System (EFVS) technologies to enable aircraft to operate in LVO/SMGCS conditions. Bruce added that the FAA is open to considering the use of high-resolution Airport Moving Map (AMM) displays as an approved substitute. However, if the FAA is going to allow moving maps as a substitute, there would be an even greater need to secure reliable data.

Ted Thompson, Jeppesen, asked about the possibility of using high-resolution AMM EFB applications being allowed as substitutes. This again raised the issue of the lack of a centralized repository within the FAA for SMGCS procedural source information. It was noted that the Airport GIS program may address SMGCS-related airport features such as lighting, signage and markings. However, currently, both procedural information and airport feature data is available only from individual airport authorities. Bruce stated that he is trying to elevate the need for good data to a higher management level within the FAA.

Valerie Watson, AJV-3, voiced her concern that the FAA is obligated in Order 8000.94 to put a remark in the AFD entries for those airports with LVO/SMGSCS operations and that AeroNav Products has not yet received guidance. Bruce responded that this issue remains unresolved and further discussion is required between himself and the AFD team. He stated that progress had been slowed because of issues with the GIS database that have yet to be resolved.

Lynette Jamison, AJR-B1, asked that if a remark is placed in AFD airport entries, would a NOTAM requirement be established for when there are LVO/SMGCS-related equipment outages? If this is the case, she stated that this would have to go into the NOTAM Order when remarks start going in to the AFD. Bruce responded that they have not yet addressed NOTAM requirements.

Joshua Fenwick, AeroNav Data, asked if the FAA is planning to publish LVO/SMGSCS charts. Valerie responded that the FAA is not able to produce LVO/SMGCS charts at present due to both the absence of funding and the absence of a reliable source flow.

STATUS: OPEN

ACTION: Bruce McGray, AFS-410, will coordinate with Valerie Watson, AJV-3, and the AFD Team regarding the publication of an AFD remark.

ACTION: Bruce McGray, AFS-410, will coordinate with Airports Engineering, AAS-100, on acquiring funding for the following: loading of LVO/SMGCS attribute data into Airports GIS, and loading of procedural data and routing notes into a publicly disseminated database.

ACTION: Bruce McGray, AFS-410, will coordinate with the NOTAM office regarding adding language into the NOTAM Order for LVO/SMGSCS equipment outages.

10-02-233 Removal of (ATC) Crossing Restrictions from STARs

Valerie Watson, AJV-3, briefed the issue. Brad Rush, AJV-3, stated that there is only one Departure Procedure remaining with an (ATC) crossing restriction which is scheduled to be removed in July 2014. An IACC specification change is currently in the approval process to remove the guidance related to adding (ATC) crossing restrictions to the charts.

STATUS: CLOSED

11-01-238 Aerobatic Area Symbols on VFR Sectional Chart

Chris Criswell, AJV-22, stated that since the last ACF, he has been in contact with Sue Gardner, AFS-800, who is part of a group working to verify the Aerobatic Practice Areas that are currently published in the Special Notices section of the AFD. Chris stated that aerobatic areas are contained in a database which exists within AFS-800. An effort has also begun within the working group to establish criteria for future publication and charting of Aerobatic Practice Areas. Chris expressed Sue's interest in a future meeting with AIM and AJV-3 regarding the establishment of publication/charting criteria.

STATUS: OPEN

ACTION: Chris Criswell, AJV-22, will continue to work with AFS-800 to establish a list of current Aerobatic Areas and to establish publication/charting criteria for these areas.

13-01-260 Inclusion of Metering Frequency, 133.57, to MSP Airport Diagram – FAA AL 264

Valerie Watson, AJV-3, reported that an IACC specification change has been submitted for the inclusion of metering frequencies on FAA Airport Diagrams. Valerie is also working with the National Flight Data Center (NFDC) to standardize the format for storing and publishing metering frequencies. This issue shall remain open until metering frequencies have been charted on the appropriate airport diagrams. There are currently only four airports with published metering frequencies: CLE, MSP, ORD, and STL.

STATUS: OPEN

ACTION: Valerie Watson, AJV-3, will report on the status of the publication of Metering Frequencies on Airport Diagrams at the next ACF.

13-01-261 Alaska Ground Based Transceivers (GBT) Locations

Valerie Watson, AJV-3, briefed the issue. Valerie commented on her attempts to obtain the release of ADS-B tower locations for publication. The ADS-B office is currently in discussions with General Council regarding the release of this data and as of this date, no decision has been made.

Lynette Jameson, AJR-B1, stated that there are around 400 GBT locations that have been identified by Tech Ops, some of which have been given identifiers so they can be databased and a NOTAM can be published against an outage. There was some confusion over the issue of whether or not there are currently GBT locations databased in NASR. It was confirmed by Chris Criswell, AJV-22, after the conclusion of the ACF that GBTs are NOT currently databased in NASR.

John Collins, GA Pilot, stated that the FAA currently publishes GBT locations on Gulf of Mexico Charts. AJV-3 was unable to confirm this at the meeting. Post ACF, it was confirmed that the ADS-B locations depicted on the Gulf of Mexico Charts were requested by the office that was then called Cartographic Standards and resided in Aeronautical Information Management (AIM). The GBT locations were provided by the requesting office in the form of a memo.

Valerie inquired as to what progress has been made since last ACF on the AFD Team's discussion with the Alaska and Western Regional Offices regarding ADS-B coverage graphics at 5,000 and 10,000 foot flight levels to be published in the Alaska Flight Supplement. Bob Carlson, AJV-322, reported that he hasn't spoken to the Region regarding the graphics. He stated that the AFD Team would not create the graphics and that the graphics would have to submitted print-ready from the regional offices.

STATUS: OPEN

ACTION: Valerie Watson, AJV-3, will continue to attempt to obtain the release of ADS-B tower locations for publication in NASR so that 3rd party vendors would have access to them.

ACTION: Bob Carlson, AJV-322, will contact the Alaska and Western Regional Offices to see if they wish to provide additional print-ready ADS-B coverage graphics at 5,000 and 10,000 foot flight levels to be published in the Supplement Alaska.

13-01-262 Airport Facility Directory (AFD) Depiction of Traffic Pattern Altitudes

Chris Criswell, AJV-22, reported that, per ACF recommendation, all traffic pattern altitudes, standard and non-standard, will be added into NASR for all airports. This will be a day forward implementation beginning in July 2014.

Valerie Watson, AJV-3, stated that this issue will remain open pending implementation.

STATUS: OPEN

ACTION: Chris Criswell, AVJ-22, will report on the progress of populating all traffic pattern altitudes at the next ACF.

13-01-263 Airport Facility Directory (AFD) Airport Manager Contact Information

Bob Carlson, AJV-322, reported that Airport Manager contact information has now been published in the AFD. Work is currently underway to also publish this information in the Alaska Supplement.

STATUS: CLOSED

13-01-264 Flight Path Angle (FPA) on STAR Charts with Published Vertical Profiles

Kel Christianson, AFS-470, shared a statement from Mark Steinbicker, AFS-470, regarding discussions in the PARC on the subject of FPAs. No decision has been made yet. However, Mark's statement indicated that there should not be an expectation that the angles will be charted.

There was general disappointment in the room at the news that FPAs may not be published. Discussion followed as to whether the FPA would be useful only for specific operators and whether or not the FAA could make this data available so that those operators who can use it would have it.

Bob Lamond, NBAA, stated that the FPA would not have limited use and that many FMS systems can use FPAs. Kevin Allen, US Airways, reiterated his recommendation that the angle be presented as "suggested" or "advisory".

Jim Arrighi, AJV-141, commented on the possibility that the data could be made available for specific operators that are equipped use it. Ted Thompson, Jeppesen, stated that Jeppesen would not add FPAs to the charts or to the data unless it was included on the FAA procedure source document. He also commented that there are chart/database compatibility issues that need to be considered. There should not be items that are databased that are not also depicted on the chart and vice versa.

Brad Rush, AJV-3, stated that there is currently nothing in the criteria to support charting FPAs. In order to get the FPA published on a chart, a policy decision will have to be made. Kevin reiterated that he would like to see a change in the policy so "advisory" FPAs can be charted.

Kel reported that Mark Steinbicker will continue to work this issue in the PARC, taking into consideration the strong support from ACF attendees regarding the continued desire have FPAs calculated and published.

STATUS: OPEN

ACTION: Kel Christianson, AFS-470, will report on progress made by the PARC VNAV Action Team.

13-01-266 Standardized Depiction of Altitude Restrictions on Bottom, Top and Maintain Altitudes on Standard Terminal Arrival (STAR) and Standard Instrument Departures (SIDs)

Tom Schneider, AFS-420, reported that the language supporting the requirement for a top altitude on departures has been added to FAA Order 8260.46E which is set to be finalized in June 2014.

Valerie Watson, AJV-3, reported that an IACC Requirement Document to support the publication of a top altitude on departures has been submitted to the MPOC.

Jim Arrighi, AJV-141, reported that the Office of Responsibility for FAA Order 7100.9 will be changed from AJV-0 to AFS-400 within a couple of months. Jim stated that there will be no policy changes made to the Order until the handoff is made official. (Meaning that no Bottom Altitude changes have been or will be made to the Order until it is in the hands of Flight Standards.)

Mike McGinnis, American Airlines, brought a concern to the group on behalf of Lev Prichard, APA. Mike briefed the group on the NELYN Departure for DFW which has what could be interpreted as two top altitudes associated with different departure runways. The original proposal, agreed upon at the last ACF, was understood to be for a single top altitude to be established/designated for each departure procedure. The group agreed that there are many departures currently published that do not lend themselves to the single top altitude philosophy and will need to be redesigned in order to comply.

Brad Rush, AJV-3, stated that the procedure being discussed does not comply with the new criteria and that there are many more in the system that do not.

Jim Arrighi stated that he has always asserted that multiple top altitudes would need to be supported. A lengthy and spirited discussion ensued which resulted in the conclusion that there had been a breakdown in communication regarding single vs multiple top altitudes on a departure. Minutes from the previous ACF support agreement that only a single altitude would be supported. In the interim, Tom revised FAA Order 8260.46 and Valerie created charting specifications in accordance with this decision. Tom expressed frustration that when the draft version of the FAA Order 8260.46E (containing guidance supporting a single top altitude) was circulated for comment, no objections were received. Jim stated that the departure guidance needs to be rewritten to include the possibility of more than one top altitude and that when the guidance is written for arrival procedures, it too will need to support multiple altitudes.

Ted Thompson, Jeppesen, said there is an underlying problem with showing more than one top altitude. Pilots will still have to read through multiple altitudes and decide at which point in the procedure which altitude is important to them. Ted expressed a concern over the fact that techniques to highlight, denote or identify a single altitude on charts will not work in cases where multiple altitudes may be used. He asserted that when numerous items are highlighted on a chart, the "highlighting" is lost and the effort is moot.

Rob Goodson, NGA, stated that he supports the depiction of only a single top altitude. He suggested that if there are multiple top altitudes, the transitions should be broken up onto multiple procedures. Jim responded that this avenue was considered and may well be the ideal solution, but is not likely to be supported for financial reasons.

Tom restated his dissatisfaction with the fact that the FAA Order 8260.46 changes have already been coordinated and are scheduled to be published in June 2014, but agreed to pull the Top Altitude guidance from the Order until a final decision has been made regarding charting. Once this is complete, the language can be rewritten accordingly.

Valerie stated that she will create new prototype charts and rewrite the charting specification to support the possibility of multiple Top Altitudes.

STATUS: OPEN

ACTION: Valerie Watson, AJV-3, will create prototypes for the depiction of multiple top altitudes on Departures.

ACTION: Valerie Watson, AJV-3, will draft a revised IACC Recommendation Document to support the publication of multiple top altitudes on Departures.

ACTION: Tom Schneider, AFS-420, will pull the single top altitude language from FAA Order 8260.46E and rewrite it to support the revised decisions made regarding charting multiple top altitudes on Departures.

ACTION: Jim Arrighi, AJV-141, will provide an update on the progress of the transfer of FAA Order JO 7100.9 to AFS-400.

13-01-267 Addition of ATC Radar Telephone Numbers in FAA AFD

Valerie Watson, AJV-3, reviewed the topic. Gary Fiske, AJV-822, stated that this has been a low priority issue. Gary stated that he is personally not opposed to the idea of publishing the telephone numbers; however, having only recently been tasked with this issue, he needs to go back and get ATC consensus. Gary did question where the numbers will be published and wanted to ensure that such information would be easily accessible by pilots. Gary inquired if the plan was to publish the contact telephone numbers on approach plates.

Valerie responded that the current plan is to only publish the numbers in the AFD. John Collins, GA Pilot, commented that more pilots are using the AFD because with the widespread use of iPads, airport information is easy to retrieve. He believes that publication of the numbers in the AFD would be sufficient.

Ted Thompson, Jeppesen, opposed the idea of putting the numbers on the approach plates because maintenance of those numbers would become a problem.

Bob Lamond, NBAA, commented that the original request was not to publish ATC phone numbers on approach plates, but to establish a consolidated telephone listing in the AFD.

Eric Fredericks, AJV-823, stated that he supports the listing of ATC phone numbers, but expressed concern that not all facilities can accept calls. Eric also questioned who within the ATC facility would handle such incoming phone calls. He highlighted that there is no simple solution and that this issue will require some legwork on the part of ATC.

Valerie emphasized that there is pilot support for this issue and the ACF should continue to work toward getting the ATC numbers published.

STATUS: OPEN

ACTION: Gary Fiske, AJV-822, will work to get a consolidated ATC response and report at the next ACF.

13-01-268 Making Alternate Missed Approach Text Accessible to ATC

Valerie Watson, AJV-3, reviewed the topic. Valerie pointed out that FAA Order 8260.19F was revised to remove the "or as directed by ATC" text from the primary missed approach instructions.

Gary Fiske, AJV-822, having only recently been tasked with this issue, stated that there has been no progress within ATC since the last ACF. Speaking as a controller, Gary questioned the need to publish and maintain the alternate missed approach information when the pilots and controllers already get the information from the NOTAMs. He suggested that the guidance in FAA Order JO 7110.65, Paragraph 4-8-9, be changed to remove references to the 8260 series Form and that the issue be closed.

Tom Schneider, AFS-420, expressed concern that the controller may not be aware of the alternate procedure if they don't have the 8260 series Form. He also noted that if the primary missed approach can't be used, there could be a lag in the time it takes to get the alternate missed approach NOTAM'd. Lynette Jamison, AJR-B1, commented that, in her experience, ATC only pulls NOTAMs every eight hours.

Bob Lamond, NBAA, representing the original proponent of this issue, is opposed to closing this item. He indicated that he would have Rich Boll, NBAA, contact Gary to discuss the matter offline.

Valerie stated that she believes there is value in having the alternate missed instructions in the hands of the controllers rather than relying totally on the NOTAMs. Brad Rush, AJV-3, stated that we need to ensure that the controllers are aware that the alternate instructions exist and that they are available.

STATUS: OPEN

ACTION: Gary Fiske, AJV-822, and Rich Boll, NBAA, will discuss the issue offline and report at the next ACF.

ACTION: Gary Fiske, AJV-822, will work to get a consolidated ATC response and report at the next ACF.

13-01-270 Step Down Fix Chart Notes

Kevin Bridges, AIR-130, reviewed the topic. He stated that this issue was discussed at the US-IFPP and that there was support for changing the profile note. The note will be changed from "LNAV only" to "LNAV/VNAV and LNAV only".

Kel Christianson, AFS-470, stated that these changes will be in the next AIM update scheduled for publication in January 2015.

Tom Schneider, AFS-420, stated that the note will be updated in the next update of FAA Order 8260.19.

Valerie Watson, AJV-3, stated that updates to the notes will be applied to the charts through either an amendment to the 8260 Form or a P-NOTAM.

STATUS: OPEN

ACTION: Tom Schneider, AFS-420, will revise FAA Order 8260.19 and report at next ACF.

ACTION: Kel Christianson, AFS-470, will track requested AIM changes and report back at next ACF.

13-02-272 Charted Critical DME Note on RNAV SIDs and STARs

Valerie Watson, AJV-3, reviewed the topic. Tom Schneider, AFS-420, reported the FAA Order 8260.46 already supports the depiction of the Critical DME on Departure notes. Brad Rush, AJV-3, stated that there are twelve outstanding Departure procedures which will be revised as they are amended.

Jim Arrighi, AVJ-141, reported that FAA Order JO 7100.9 already supports the depiction of the Critical DME in Arrival chart notes. Brad reported that a list of STAR procedures with notes that need to be updated has been sent to Air Traffic and the notes will be updated as the procedures are amended.

Lynette Jamison, AJR-B1, had no update since the last ACF regarding how NAVAID outage NOTAMs are worded. She will continue to research how the NOTAMs are worded and whether or not this needs to be enhanced so that the DME portion of a NAVAID can be specified as OTS.

Editor's Note: Post ACF, Lynette confirmed that the DME aspect of a facility is clearly listed in a NAVAID outage NOTAM.

STATUS: CLOSED

13-02-273 Publication of Diverse Vector Areas (DVAs)

Tom Schneider, AFS-420, reported that FAA Order 8260.46 guidance for DVAs will be published with the June 2014 update. AFS-420 will work revisions to the Instrument Procedures Handbook (IPH).

Valerie Watson, AJV-3, reported that an IACC Recommendation Document has been submitted to the MPOC in support of the publication of DVAs as part of Takeoff entries in the front matter of the TPPs.

Bruce McGray, AFS-410, reported that he is still working on drafting guidance material for insertion into the AIM.

Valerie stated that publication of DVAs should wait until the AIM guidance is in place so that pilots understand what they are and how they are to be used.

Editor's Note: Order 8260.46E was signed on May 30, 2014.

STATUS: OPEN

ACTION: Bruce McGray, AFS-410, will continue to work with AFS-420 on drafting guidance material on DVAs for insertion into the AIM and report back at the next ACF.

ACTION: Tom Schneider, AFS-420, will report on updates to the IPH.

VII. New Charting Topics

14-01-274 Solar Power Plant Ocular Hazard Symbol on Aeronautical Charts

Valerie Watson, AJV-3, briefed the issue on behalf of the submitter, the FAA Western Service Center Operations Support Group. Valerie stated that the number of Solar Energy Power Plants has rapidly increased over the past several years. Many of these sites cover hundreds of acres and can contain hundreds of thousands of mirrors. Pictures were displayed to the group of several existing plants. The Service Center is concerned that the only thing charted currently is the associated obstruction tower often located in the center of the solar farm. This does not address the associated glare from the mirrors during day-time operations, which may present an ocular hazard to flight crews passing within the vicinity of such solar farms. The submitter of this request would like to see solar farms indicated on visual charts not only as a visual landmark for VFR navigation, but also identified as a potential hazard to pilots.

Ron Haag, AJV-321, stated that there is already a precedent for similar hazards being shown on the visual charts as a landmark symbol with a boxed note.

Ted Thompson, Jeppesen, asked how the information will be sourced and maintained. Chris Criswell, AJV-22, questioned why it would have to be databased and stated that there are currently similar items on visual charts that are not contained in any database. Ron stated that his office could go through the Operations Support Group (OSG) to get a listing of the areas that should be charted.

John Moore, Jeppesen, stated that the group still needs to try to define the problem. He questioned whether these areas should be considered as landmarks or if these sites should be considered a hazard and charted as such. He started that the source would have to meet certain criteria in order to be considered a hazard.

Melissa McCaffrey, AOPA, stated that she is part of the Southern California Airspace Users Working Group and pilots there have stated that this is a hazard. She offered to go back to that group and try to get more information from pilots in that area.

JoIda Reed, AJV-W21, stated that these areas are potential hazards and recommends that they be charted as such. Jolda cited the Airport Cooperative Research Program report regarding solar energy and its potential impacts on aviation in her comments.

Valerie stated that we do not have enough information yet to know whether or not this should be defined as a hazard or if it should be charted as such. Visual charting team can, under current specifications, show these farms as landmark objects or areas with accompanying text to identify them as solar farms, but it is beyond the scope of the charting offices to designate them as "hazards".

STATUS: OPEN

ACTION: Ron Haag, AJV-321, will work with the Western Service Area, Operations Support Group, to pursue the charting of these areas a landmark object or area symbol with identifying text.

ACTION: Melissa McCaffrey, AOPA, will gather more information from pilots in Southern California and will report back on the scope of the problem.

14-01-275 Charting Speed Limited Areas on Instrument Approach Plates

Valerie Watson, AJV-3, briefed the issue on behalf of the submitter, Bennett Taber, Dreamline Aviation. Valerie stated that the recommendation relates to pilots exceeding the 200K speed limit below Class B airspace because the parameters of the Class B airspace is not depicted on approach charts. To demonstrate the concern to the group, Valerie showed an approach into Santa Ana, CA (SNA). The proponent contends that pilots are unaware when flying the approach that they are under a shelf of LAX Class B airspace and must reduce their speed below 200K. Mr. Taber suggests that the parameters of Class B airspace be graphically depicted on Instrument Approach Plates (IAPs) to insure that pilots do not exceed the speed restriction specified in 14 CFR Sec 91.117(c).

Gary Fiske, AJV-822, stated that currently ATC may assign an instruction, but the rule may require something else. He stated that the rule trumps ATC direction. Gary stated that this may soon become a non-issue due to an ongoing rulemaking action change to 14 CFR Sec 91.117(c) that will add the language "or as otherwise authorized by ATC". This revision will permit ATC to assign speeds under Class B airspace higher than the specified 200K and pilots will not be in conflict when adhering to the ATC instruction.

Valerie questioned the group as to whether these areas should be shown on the approach charts. She stated that it was her understanding that pilots are expected to conduct the necessary pre-flight activities so that they are aware if they will be entering into Class airspace.

Ted Thompson, Jeppesen, stated that showing airspace on the charts would be cartographically impossible due to several issues including chart clutter and the fact that DPs and STARs are not drawn to scale. Rob Goodson, NGA, agreed that charting airspace on the IAPs would not be possible due to chart clutter.

Bob Lamond, NBAA, stated that part of the problem is that there are speeds on the charts that violate the rules. Ted stated that there seems to be a disconnect between PBN aircraft and the structure and regulation of non-PBN airspace. Valerie stated that charting cannot solve those issues.

Gary reiterated that, once the rule gets changed, this issue should no longer be a concern. Brad Rush, AJV-3, responded that the rule change is part of the answer, but that pilots need to be situationally aware of their location relative to the Class B airspace and behave accordingly.

Mike McGinnis, American Airlines, stated that if a pilot is looking at an approach chart, there is no awareness that he is under a Class B shelf. He suggested that rather than chart the parameters of the airspace, perhaps a note could be placed on the chart to make the pilot aware. Brad stated that the approach charts are not designed to warn pilots about airspace. There are 30 Class B areas in the country, they are all located in high profile metropolitan areas and pilots are not unaware of them. Ted and Valerie both stated that adding a note would cause too much chart clutter.

Brad asked Gary to contact SOCAL TRACON regarding their local situation and specifically the alleged high numbers of speed violations in the area.

At the end of the discussion, Valerie asked the group if there was support for the depiction of Class B airspace on the approach charts. There was general agreement that a charting solution is not the answer.

STATUS: OPEN

ACTION: Gary Fiske, AJV-822, will update the group on the status of the change to the Rule.

ACTION: Gary Fiske, AJV-822, will contact SOCAL TRACON regarding these issues and the discussion at the ACF and report back to the group.

14-01-276 Removal of Non-Alaska Facility Information from Alaska Supplement

Valerie Watson, AJV-3, briefed the issue on behalf of the submitter, Marshall Severson, FAA Alaska Flight Services Information Area Group. Mr. Severson is asking to remove non-Alaska facilities information from the Alaska Supplement. Over the last few years, the Alaska group has been slowly identifying concerns about accuracy of the data.

Valerie stated that requests to add certain non-Alaska airport or facility information into the Alaska Supplement have come in over the last 30 years by special request. Valerie expressed hesitation for the removal of such content without an understanding of how that will impact the users. Before agreeing to remove this information from the Supplement, she stated that the users should be polled to see if there is consensus. Valerie asked Melissa McCaffrey, AOPA, to take the issue back and speak with the AOPA membership regarding this issue.

Mike Yorke, AAL-03, speaking as a user of the Alaska Supplement, stated that he feels that it is helpful to have the non-Alaska information published. He is aware of the proponent's recommendation and said that the issue was being raised because it appears that the non-Alaskan information is not being maintained and there are a lot of errors in the data. Valerie responded that the FAA is responsible for the upkeep of the data. If errors are found, they should be reported.

STATUS: OPEN

ACTION: Melissa McCaffrey, AOPA, will speak with the AOPA membership regarding the possible removal of non-Alaska information from the Alaska Supplement and report at the next ACF.

ACTION: Valerie Watson, AJV-3, will speak with the proponent of this issue regarding the discussions held at the ACF and regarding maintenance of the data currently published.

14-01-277 Discontinuation of World Aeronautical Chart (WAC)

Ron Haag, AJV-321, briefed this issue on behalf of FAA AeroNav Products, VFR Charting. Ron emphasized at the beginning of his briefing that the recommendation for the discontinuation of the WACs is only in the initial stages of consideration. Ron added that the purpose of bringing this topic to the ACF is to gather user input.

Ron outlined the reasons the FAA is investigating the possibility of discontinuing the publication of the WAC, including; the availability of digital Visual Charts, the expanding use of devices such as iPads and Electronic Flight Bags, the loss of NGA as key purchaser, and an overall decline in printed chart subscribers. Ron commented that the decline in the paper sales of the WAC charts has been more rapid than other FAA Charting products. Ron also stated that there is duplicate coverage on the Sectional Charts in all but a very limited area. The proposal is to discontinue the WACs, except where obligated by international agreement, or in areas that do not have sufficient alternate VFR (Sectional) coverage. Ron then opened the floor to user comments.

John Kernaghan, NBAA, commented that FAR Part 135 operators are required to have Visual charts in the cockpit and he felt that some pilots choose to carry the WACs because a single WAC covers a great deal more geographical area than a Sectional chart. He said he will poll some of NBAA's membership to determine the level of demand for the WACs.

George Sempeles, AOV-310, stated that the WACs are a required product by ICAO and the US would have to file a difference if they are discontinued.

John Moore, Jeppesen, asked about the international agreements and the requirements of those agreements. Ron responded that his office is looking into that issue. John then stated that despite the decline in sales, there are still a sizable number of users that still purchase the WACs. He suggested that the FAA try to determine who those users are and if the available alternatives would be suitable for those users.

Melissa McCaffrey, AOPA, commented that many pilots may be using the WACs for flight planning purposes. She asked if there would be a public comment period. Ron responded that yes, there would be outreach and time for public comment.

Bruce McGray, AFS-410, suggested that the original intent of the WACs be reviewed to ensure that the original requirements are being met by other products. Bruce also inquired as to whether the proposal would be open to formal comment. Ron reiterated that yes, a public comment period would be provided.

Jay Jackson, AJV-222, suggested that coverage of the sectional charts could be expanded to meet the geographical requirements. Ron responded that expansion of the Sectional chart coverage would probably prove cost prohibitive.

Valerie Watson, AJV-3, asked Melissa if she could poll the AOPA membership to gather feedback on the impacts of discontinuing the WACs. Melissa responded that she would coordinate with Ron and begin doing some regional outreach.

STATUS: OPEN

ACTION: Ron Haag, AJV-321, will take the comments received at the ACF back to the VFR charting team management, will seek a venue for public comment and will report back at the next ACF.

ACTION: Melissa McCaffrey, AOPA, will coordinate with Ron Haag, AJV-321, to begin to gather feedback from the AOPA membership and report back at the next ACF.

14-01-278 Alaska Designated Common Traffic Advisory Frequency Area Chart Depictions

Mike Yorke, AAL-03, presented this issue. Mike described several mid-air collisions and near mid-air collisions that have occurred in Alaska. The findings of the NTSB were that there was inadequate visual lookout contributed to by a lack of standardization of CTAF frequencies. As a result, a government/industry working group was formed to come up with recommendations reduce the confusion regarding overlapping CTAF areas with different frequencies.

One of the recommendations generated by the Working Group is the establishment of designated CTAF area boundaries. The CTAF areas are already set to be published graphically in the Special Notices section of the Alaska Supplement. The working group is proposing a change to charting convention to add the symbology for CTAF area boundaries to Visual Charts.

John Moore, Jeppesen, stated that once these areas are charted for Alaska, this concept may be desired elsewhere. John stated that the FAA should look carefully at the impacts of depicting CTAF areas on visual charts. Mike agreed that if this concept works well, it is likely that Alaska will ask for more of these areas to be charted in the future. Valerie stated that the charting offices would not want to see this concept expand into the lower 48. She stressed that the charting specifications that would allow these boundaries on the Alaskan charts would also apply to the entire chart series.

Ron Haag, AJV-321, reported that the May 29, 2014, Juneau Sectional chart will include the addition of CTAF frequencies associated with airports. Ron inquired if this could be a solution to the problem.

Mike stated that he still thinks that adding boundary lines to the chart to define the parameters of the areas is of greater value. Adding a CTAF boundary line is the only way the pilot will know where the frequency changeover is. Ron stated that adding CTAF boundary lines to the sectional may not be very useful to pilots if the areas are too small to be shown clearly on the chart. He suggested the possibility of a separate inset that would be available digitally.

Melissa McCaffrey, AOPA, commented that there is value in showing this information on an inset similar to the Juneau High Density Traffic Area inset. Ron stated that there is not enough room on the Anchorage Section or TAC charts to place an inset. He stated that the Anchorage enroute inset currently does not cover enough space to cover these areas. Ron will look into the possibility of adjusting this inset coverage.

George Sempeles, AOV-310, recommended that a note could be placed on the sectional to direct pilots to a separate publication. Valerie spoke in support of this notion & voiced that consideration should be given to directing users via chart notes to the detailed CTAF Area graphics in the Alaska Supplement or insets, and warned that the addition of linework in small-scale areas on Sectional charts will likely compromise the portrayal of existing data. Mike agreed that he would like to see a note on the chart.

Melissa suggested that Ron be made part of the working group for this issue. Ron stated that there are a range of possible solutions that he will investigate and he will coordinate with Mike and the working group to address this issue.

STATUS: OPEN

ACTION: Ron Haag, AJV-321, will coordinate with Mike Yorke, AAL-03, to investigate the possible solutions discussed, develop prototype graphics and report at the next ACF.

14-01-279 Naming of FAA Certified, Nationally Disseminated AWOS-3 Systems on Private Use Airports

Regina Sabatini, AJV-22, summarized the topic. Regina stated that there has been an increase in FAA-certified AWOS-3 systems that are located on private-use airports. As a result, questions have arisen regarding to how those weather systems should be identified, covered by NOTAM and depicted on aeronautical charts.

Currently, private-use airports are assigned four character identifiers and public-use airports are assigned three character identifiers. Typically when an AWOS is located on an airport, the identifier matches the airport identifier. For AWOS systems located on private airports, however, there are limits in the usefulness in using a matching four character identifier. The identifier of an AWOS on a private airport would not be compatible with METARs and NOTAMS. Independent Stand-alone weather systems that are not associated with an airport are currently assigned three character identifiers. Regina proposed two solutions to the problem and solicited for feedback from the group;

1. Reassign the private use airport a three character FAA location identifier and then assign that same identifier to the weather system located on airport.
2. Assign a three character FAA identifier to the weather system that is independent of the four character private use airport identifier and treat the weather system as a standalone facility.

Valerie Watson, AVJ-3, indicated that she supports proposal number 2, however she still saw outstanding issues with it. There is currently no place in NASR to differentiate whether an automated weather system is FAA-certified and available for private or public use. Valerie stated that there is a concern that some of the privately owned AWOS systems on private airports have not been databased. Once theses privately owned AWOS systems have been databased, how will the charting office know which ones are certified and available for public use? Regina responded that only certified, public use facilities will be databased in the ASOS/AWOS file of NASR and made available for charting.

John Moore, Jeppesen, asked if there could be instances where a public instrument approach procedure refers to an AWOS on a private airport. Brad Rush, AJV-3, stated that today, the remote weather systems utilized on IAPs are located at public-use airports and are referred to by name only. Valerie stated that if, in the future, these stand-alone AWOS systems were utilized on IAPs, the chart could refer to the AWOS system only and not make reference to the private airport. She stated that we may need to consider identifying these systems by ident, as the private-use airport on which they are situated may not be published.

Ted Thompson, Jeppesen, asked how the AWOS will be referred to and how pilots will know where the AWOS is located. Regina stated that all of these weather systems would be contained in the ASOS/AWOS file of NASR and would contain positional information (Latitude/Longitude) and a location identifier. After some discussion, it was concluded by the group that all AWOS should be published with both name and identifier on the charts and when referenced in a note (as in a remote weather source on an IAP).

Cathy Riccio, AJV-22, indicated that in her conversations with Rick Funkhouser, AJV-22, he indicated that he would like to assign a four character private-use identifier to the AWOS systems located on private-use airports so that the airport and the weather system could be tied by the same location identifier. Regina stated that this option was investigated but was not viable because it is not compatible with METAR transmission or NOTAM publication, both requirements for nationally-disseminated, public-use weather systems.

Lynette Jameson, AJR-B1 , expressed her support for proposal number two, referencing the compatibility with the NOTAM system.

Regina concluded that the consensus of the group supports proposal number two. She stated that her next step will be to take that option through the Safety Risk Management process.

STATUS: OPEN

ACTION: Regina Sabatini, AJV-22, will proceed with the concept of assigning a three character identifier to AWOS systems on private use airports and will report back at the next ACF.

ACTION: Valerie Watson, AJV-3, will draft a charting specification change to support charting stand-alone ASOS/AWOS (which includes those located on private-use airports) with both the name and the identifier on Visual & Enroute charts.

ACTION: Brad Rush, AJV-3, will work with AFS-420 to determine if policy should be changed to include ASOS/AWOS location IDs in remote weather system notes on IAPs.

VIII. Closing Remarks

Valerie Watson, AJV-3, thanked everyone for their participation and voiced special appreciation to Al Herndon and MITRE for hosting the ACF.

Notices of the official minutes will be announced via email and provided via the Internet. The two website addresses (CG and IPG) are provided below (Please note the changes in the Charting Groups URL and update your browsers book marks accordingly):

- Charting Group - http://www.faa.gov/air_traffic/flight_info/aeronav/acf/
- Instrument Procedures Group - http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs420/acfipg/

Please note the attached Office of Primary Responsibility (OPR) listing for action items. It is requested that all OPRs be prepared to provide verbal input at the next Forum or provide the Chair, Valerie Watson (with an information copy to Alex Rushton, Contract Support), a written status update. These status reports will be used to compile the minutes of the meeting and will serve as a documented statement of your presentation.

Appreciation to Jennifer Hendi, AJV-3 for recording the Minutes, to Steve VanCamp, Contract Support to AFS-420, for presentation assistance, and to Alex Rushton, Contract Support to AJV-3, for conference support pre- and post-conference.

IX. Next Meeting

ACF 14-02 is scheduled to be held on October 28-30, 2014, hosted by Innovative Solutions International at Pragmatics, Inc. corporate headquarters in Reston, VA.

ACF 15-01 is tentatively scheduled to be held on April 28-30, 2015, hosted by ALPA in Herndon, VA.

ACF 15-02 is scheduled to be held on October 27-29, 2015, hosted by Lockheed Martin at their Global Vision Center, located in Crystal City, VA.

X. Attachments

a. 14-01 Attendee Roster
b. Office of Primary Responsibility (OPR)

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 14-02 – October 28-30, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-280

Subject: SID Charting Standards

Background/Discussion: Many SID's have MEA's specified that are of little or no operational significance. I believe that they are actually the highest altitude that can be assigned by Departure Control. Examples include the Hugo Two used in the Charlotte area and the Tar Heel 8 in the Raleigh Durham area. As long as the Charlotte area SID has been in existence, the 11000 foot MEA shown on the SID transition routes has never been assigned to me on departure. There is never a case where it would come into play even if lost communications occurred. I asked the Charlotte TRACON and they did not know why the MEA was charted as 11000 and the AeroNav specialist just said it was at Charlotte's request.

The MEA is defined in the Pilot/Controller Glossary (PCG) as:

"MINIMUM EN ROUTE IFR ALTITUDE (MEA)− The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The MEA prescribed for a Federal airway or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route."

Also, the format of the SID used at Billings Montana should be used for all SIDs to specify the Lost Communications Procedure as it would clarify what the pilot is expected to do under these circumstances, particularly in the case of a radar vector SID. The Billings Four states: "If no transmissions are received for 1 minute after departure, fly last assigned heading until reaching 7000. Proceed direct BIL VOR, then via last routing cleared and climb to filed altitude." I am sure this is included because of obstacles in the area, but the concept of providing guidance on the SID for lost communications is a good one that could apply to all vector SIDs.

91.185 states the following for determining the route and altitude:

(c) *IFR conditions.* If the failure occurs in IFR conditions, or if paragraph (b) of this section cannot be complied with, each pilot shall continue the flight according to the following:

(1) *Route.*

(i) By the route assigned in the last ATC clearance received;
(ii) If being radar vectored, by the direct route from the point of radio failure to the fix, route, or airway specified in the vector clearance;
(iii) In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or
(iv) In the absence of an assigned route or a route that ATC has advised may be expected in a further clearance, by the route filed in the flight plan.

(2) *Altitude.* At the highest of the following altitudes or flight levels for the route segment being flown:

(i) The altitude or flight level assigned in the last ATC clearance received;
(ii) The minimum altitude (converted, if appropriate, to minimum flight level as prescribed in Sec. 91.121(c)) for IFR operations; or
(iii) The altitude or flight level ATC has advised may be expected in a further clearance.

Recommendations: If these are in fact the highest possible altitude that may be assigned for these routes, they should be charted as such with the line over the altitude. On radar vector SID's provide a lost communications procedure if communications are not established.

Comments:
Note: This can be broken into two recommendations.

Submitted by: John Collins
Organization: None
Phone: 704 576-3561
E-mail: johncollins@carolina.rr.com
Date: April 14, 2014

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 14-02 – October 28-30, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-281

Subject: Publish Electronic forms of MVA Charts

Background/Discussion:

With the ubiquitous capability of iPad and other EFB solutions on the marketplace, pilots could have easy access to the minimum vectoring altitudes used by controllers. This can enhance safety as a cross check by the pilot would be feasible. Pilots have long requested this information.

Recommendations: Provide an electronic format (ideally digital vector format) for all MVA charts that can be displayed in the cockpit by pilots on their EFB.

Comments:

Submitted by: John Collins
Organization:
Phone: 704 576-3561
E-mail: johncollins@carolina.rr.com
Date: 04-14-14

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 14-02 – October 28-29, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-282

Subject: VASI/PAPI Differences

Background/Discussion:

PAPI and VASI systems use different Obstacle Clearance Surfaces (OCS). Essentially the VASI is 4 NM and begins at the threshold. However, there are more PAPI installations than VASI installations and the obstacle evaluation area begins 300 feet in front of the PAPI location, roughly 700 feet from the threshold and only extends from this position another 4 SM as opposed to 4 NM with the VASI. If the pilot is using their DME or RNAV distance, the VASI will read 4 NM from the threshold while the PAPI will read OCS is roughly 3.4 NM when its indication will provide obstacle protection for the descent to the runway.

The VASI and PAPI distances are described in the AIM as 4 NM and 4 SM respectively from the threshold.

Recommendations:

Change the PAPI OCS to be 4 NM from the threshold instead of 4 SM from an offset in front of the threshold so that both the PAPI and VASI have the same protection.

Comments:

Submitted by: John Collins
Organization:
Phone: 704 576-3561
E-mail: johncollins@carolina.rr.com
Date: 04-14-14

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 14-02 – October 28 - 30, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-283

Subject:

The following are paraphrased comments from a Coast Guard Final Decision Safety Message regarding the loss of one of its helicopters and three service members following a wire strike in July 2010.

Background/Discussion:

On the morning of Wednesday, 07 July 10 a Coast Guard MH-60T Jayhawk helicopter was transiting north along the Washington coastline when it struck power transmission lines east of James Island just off the coast of La Push, WA. One crew member sustained non life-threatening injuries while the other three died as a result of impact forces during the mishap sequence. The cost of the destroyed Coast Guard MH-60T aircraft was $30,180,000; the cost to repair the ground power infrastructure was $366,346. The mishap causal factors noted that the crew did not identify or see and avoid the charted wire hazard. Following a fatal aircraft accident in 1961 involving a small fixed-wing aircraft, the Coast Guard re-installed these wires along the same course, adding a series of orange aviation warning markers to increase visibility of the hazard.

Recommendations:

U.S. Coast Guard Directed Action from the Final Decision Safety Message: The Vice Commandant of the Coast Guard directed the Assistant Commandant for Capabilities (CG-7) to coordinate with necessary stakeholders to put forth a change recommendation to the FAA to revise and model current U.S. VFR sectionals after Canadian VFR sectionals chart color contrast and hazard symbology.

U.S. Coast Guard Request to the FAA's Charting Group (CG): We request that the group approve updates of US VFR charts to provide more prominent markings of charted obstacle hazards to save lives and preserve property through improved pilot situational awareness and avoidance of charted obstacle hazards.

Comments:

The Canadian VFR sectional's hazard depictions were recommended by Coast Guard aircrews, the Commandant's Mishap Analysis Board (MAB),[1] Mishap Unit Chain of Command,[2] and the Commandant's Safety Board (CSB)[3] for inclusion in US VFR Sectionals to help mitigate future wire strike mishaps.

Submitted by: Mr. Christopher Hill
Organization: U.S. Coast Guard Aviation Safety
Phone: 202-475-5176
E-mail: christopher.b.hill2@uscg.mil
Date: August 22, 2014

[1] The Commandant's Mishap Analysis Board (MAB) is the field investigative team activated following a mishap.
[2] The mishap unit chain of command comments and endorses the findings and recommendation of the MAB.
[3] The Commandant's Safety Board (CSB) is the headquarters board that comprises the Coast Guard's Chief Pilot, Chief Aviation Engineer, Chief Aviation Safety Officer and Chief Flight Surgeon. The CSB adjudicates the MAB report and all chain of command comments and endorsements and prepares the final decision message for Vice Commandant approval and release.

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 14-02 – October 28 - 30, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-284

Subject: DME-Only Facilities – Charting and MAGVAR Issues

Background/Discussion:

The VOR MON program is discontinuing approximately half of the VOR facilities in the NAS by the year 2025. The Distance Measuring Equipment (DME) and Tactical Air Navigation (TACAN) portion of the facilities will be retained to enable Area Navigation (RNAV) for aircraft equipped with scanning DME receivers with inertial reference unit (IRU) avionics.

These facilities will retain the three-letter identification codes, which have geographic meaning contributing to pilot/controller situational awareness. Although the DME-only facilities can't be used for conventional VOR navigation, the familiar facility locations and 3-letter IDs can be used for RNAV operations and should therefore be charted.

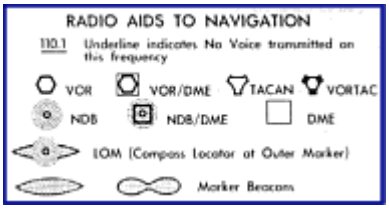
Additionally, some aircraft avionics use a "reference NAVAID", typically VOR and NDB facilities, to obtain magnetic variation. As VORs are removed, larger variations may result if the "reference NAVAIDs" are farther away from the IFP. [8260.19, paragraph 2-5-3f(2)

Recommendations:

1. The ACF should recommend appropriate policy to chart DME-only facilities and retain the familiar 3-letter IDs for pilots and controllers to use for RNAV operations.

2. Additionally, the ACF should recommend appropriate policy so that RNAV IFPs can use DME-only and/or TACAN facilities as "reference NAVAIDs" to obtain MagVar values.

Comments:
Below is a graphic on symbols for various NAVAIDs



Submitted by: Leo Eldredge, TetraTech, for Rowena Mendez, FAA
Organization: **FAA AJM-324**
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Date: August 26, 2014

AERONAUTICAL CHARTING FORUM
Charting Group

Meeting 14-02 – October 29-30, 2014

RECOMMENDATION DOCUMENT

FAA Control 14-02-285

Subject: Charting of Arctic UAS Permanent Areas mandated by the FAA Modernization and Reform Act (FMRA) of 2012.

Background/Discussion:
The FMRA, Section 332 (d)(1) mandates that the FAA designate permanent areas in the Arctic where small unmanned aircraft may operate 24 hours per day for research and commercial purposes:

SEC. 332. INTEGRATION OF CIVIL UNMANNED AIRCRAFT SYSTEMS INTO NATIONAL AIRSPACE SYSTEM.
(d) EXPANDING USE OF UNMANNED AIRCRAFT SYSTEMS IN ARCTIC.—
(1) IN GENERAL - Not later than 180 days after the date of enactment of this Act, the Secretary shall develop a plan and initiate a process to work with relevant Federal agencies and national and international communities to designate permanent areas in the Arctic where small unmanned aircraft may operate 24 hours per day for research and commercial purposes. The plan for operations in these permanent areas shall include the development of processes to facilitate the safe operation of unmanned aircraft beyond line of sight. Such areas shall enable over-water flights from the surface to at least 2,000 feet in altitude, with ingress and egress routes from selected coastal launch sites.

The Secretary of Transportation signed the Arctic sUAS Plan: Expanding Use of Small Unmanned Aircraft Systems in the Arctic Implementation Plan, FAA Modernization and Reform Act of 2012 on 11/1/2012. The plan requires the establishment of several routes for ingress/egress from selected coastal launch sites to access the permanent Arctic areas. The routes will extend from the selected coastal launch sites, through domestic airspace to the permanent Arctic areas.

The procedures for using the permanent Arctic areas will be developed as a part of this plan. Typical procedures used for corridor routes in other areas of the NAS require operators using the corridor routes to file, activate, and close a flight plan with the appropriate aeronautical facility

Recommendations:

Comments: 10 coastal launch sites and associated corridor routes accessing international airspace are attached for charting consideration. Larger oceanic areas will be presented at the charting forum in the Anchorage Arctic Flight Information Region for charting consideration.

Attachments: Arctic sUAS Plan, Wainwright, AK coastal launch site and corridor, Oliktok Point ALTRV, Proposed coastal launch sites, Arctic Areas jpg.

Submitted by: Cliff Sweatte, sUAS Program Manager
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Date: September 17, 2014

Expanding Use of Small Unmanned Aircraft Systems in the Arctic Implementation Plan
FAA Modernization and Reform Act of 2012

Introduction

This plan responds to the following section of the *FAA Modernization and Reform Act of 2012* (the Act):

SEC. 332. INTEGRATION OF CIVIL UNMANNED AIRCRAFT SYSTEMS INTO NATIONAL AIRSPACE SYSTEM.
(d) EXPANDING USE OF UNMANNED AIRCRAFT SYSTEMS IN ARCTIC.—
(1) IN GENERAL - *Not later than 180 days after the date of enactment of this Act, the Secretary shall develop a plan and initiate a process to work with relevant Federal agencies and national and international communities to designate permanent areas in the Arctic where small unmanned aircraft may operate 24 hours per day for research and commercial purposes. The plan for operations in these permanent areas shall include the development of processes to facilitate the safe operation of unmanned aircraft beyond line of sight. Such areas shall enable over-water flights from the surface to at least 2,000 feet in altitude, with ingress and egress routes from selected coastal launch sites. (*2) AGREEMENTS - *To implement the plan under paragraph (1), the Secretary may enter into an agreement with relevant national and international communities.*

This Plan is intended to inform interested parties, operators, Federal agencies and international communities of the Federal Aviation Administration's (FAA) plan to establish permanent operational areas and corridor routes (for access to coastal launch sites)in the Arctic for the operation of small Unmanned Aircraft Systems (sUAS). These permanent areas will permit sUAS operations from the surface to at least 2,000 feet Above Ground Level (AGL) for research, commercial purposes and Search and Rescue (SAR). One of the Plan's objectives is to create a specific process to allow safe operation in the Arctic areas.

Areas of Opportunity

The requirements of the Arctic provisions of the Act present several challenges:

First, airspace areas as described in the legislation are over international waters that the FAA controls on behalf of the International Civil Aviation Organization (ICAO). Changes to the airspace will have to be approved by ICAO. Additionally, there are other international stakeholder bodies that exist for international cooperation in the Arctic region that must be consulted.

Second, the type of airspace described in the legislation does not fit any of the existing types of airspace currently used by the FAA. This means that rules for operation of the airspace will have to be created and agreed upon, driving the need for a new airspace rule.

Third, the legislative requirement to allow commercial sUAS Arctic operations requires aircraft design and production approval, operational approval and pilot aircraft certification. At this time, there are no applicable civil standards that may be used to certificate the aircraft, certificate the operators or certify pilots flying the aircraft, as described in the Act.

Given these challenges, the task of preparing a plan has proven to be both complex and time consuming. However, the FAA has found a way forward that should result in the successful creation of the permanent Arctic areas, approval criteria for the aircraft, and pilot certification criteria.

Benefits

Expanding sUAS into the Arctic provides benefits to many communities, including scientific research, SAR, environmental analysis, fisheries, marine mammal observers, oil and gas leaseholders and maritime route planners. The uses of sUAS will continue to expand as technologies and performance characteristics become better understood and integrated into sUAS operations.

Approach

The FAA has formed a team (the Team) of subject matter experts from across the FAA led by the Unmanned Aircraft Systems Integration Office (AFS-80). The Team consists of members from both FAA Headquarters and the Alaska Region. The Team has collaborated to create this plan.

Stakeholders

Members of the FAA Arctic Team have begun and will expand the process of working with relevant Federal agencies and international communities by seeking their input on this implementation plan. Groups consulted to-date include:

- National Oceanic and Atmospheric Administration (NOAA)
- United States Coast Guard
- National Aeronautics and Space Administration
- Department of Energy
- Department of the Interior
- UAS Executive Committee Senior Steering Group
- Department of State
- Arctic Council and its member States
- Cross Polar Working Group
- Marine Mammal Commission
- International Civil Aviation Organization (ICAO)
- The State of Alaska

Legislative Compliance

The FAA plans to establish three permanent Arctic areas to comply with the Act:

1) Southern Arctic Area: The portion of the Anchorage Continental Control Area (CTA) Flight Information Region (FIR) overlying the Bering Sea, north of the Aleutian chain and south of the Bering Strait beyond domestic US airspace.

2) Bering Strait Area: An area connecting the Southern and Northern Area through the Bering Strait which will allow sUAS to assist with SAR operations and shipping lane ice surveys.

3) Northern Arctic Area: The Anchorage Arctic CTA/FIR areas of the Chukchi Sea and the Beaufort Sea beyond domestic US airspace. The Anchorage Arctic CTA/FIR has a floor of FL230, the airspace below is Class "G" or uncontrolled airspace.

Corridor Routes and Procedures

The plan requires the establishment of several routes for ingress/egress from selected coastal launch sites to access the permanent Arctic areas. The routes will extend from the selected coastal launch sites, through domestic airspace to the permanent Arctic areas.

The procedures for using the permanent Arctic areas will be developed as a part of this plan. Typical procedures used for corridor routes in other areas of the NAS require operators using the corridor routes to file, activate, and close a flight plan with the appropriate aeronautical facility.

Airspace Actions

Definition of the airspace and the corridor routes has already commenced and will be the initial step in the process. "Warning Areas" exist in international airspace that are currently used for military operations. The safety of civil manned aircraft is maintained by keeping them out of these "Warning Areas" when they are in use by the military. The FAA has delegated management of the "Warning Areas" to the military. Hence, the designation "Warning Area" may not be used for civil operations. As a result, the "Warning Area" management approach, as described above, has been effective. For the permanent sUAS Arctic civil operations described in the Act, a similar "Warning Area" strategy will be used that will require rulemaking.

While sUAS areas are in use in the permanent Arctic areas, manned aircraft will be advised that UAS operations are in progress and the UAS may not be able to comply with operating rules that require manned aircraft to see and avoid other manned aircraft. When operating in the permanent Arctic areas, requiring manned aircraft to give right-of-way to the unmanned traffic is beyond the scope of existing Federal Aviation Regulations that address aircraft right-of-way. Additional rulemaking or a technical amendment(s) to existing rules may be required. Specific manned operations may be accommodated for operation in the area via an agreed to process consisting of an approved request, authorization and NOTAM. A coordinating body will be required to manage UAS, or both UAS and manned aircraft, access to the permanent Arctic areas to allow for manned operations to be conducted safely. This approach still poses a risk to general aviation aircraft that may be operating in or near the permanent Arctic areas and access corridors. A possible mitigation for this risk is to require all manned and unmanned aircraft to use an Automatic Dependent Surveillance Broadcast (ADS-B) system or other technologies that

enhance see/sense and avoid capabilities. Final configuration of the aircraft and operational rules will be determined by the FAA via a formal safety risk management assessment and rulemaking.

The FAA may designate one or more controlling government agencies to operate in the permanent Arctic areas and/or the corridor routes. Such designations are expected to be made in an agreement between the FAA and the controlling agency.

International Agreements

Resolving international issues will be time consuming and have already been initiated. Once the airspace design, sUAS certification standards, and the operating procedures have been developed, the design, certification standards and procedures will be vetted through ICAO. Approval by ICAO or relevant national or international entities will represent the agreement that is required in the legislation

Operating Requirements

Approval of UAS operations and pilots will challenge current regulations for manned aircraft. Procedures for pilot approval that have previously been developed for use by law enforcement may be applicable to operations conducted in the permanent Arctic areas. These procedures will be examined in conjunction with a review of the existing operational rules for approving commercial operations. The standard approach would be to use FAR PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON DEMAND OPERATIONS. However, this Part is not written with sUAS in mind and many sections may not be applicable. The operational members of the FAA team will conduct a careful review of the operating airmen and certification rules to find the best fit for operations conducted in the permanent Arctic areas.

The FAA will examine existing operational approval methods to determine the most appropriate mechanism to grant these authorizations. Authorizations will be issued by the Alaska Region Flight Standards Organization after international agreements are in place and aircraft are certified.

As required by the legislation, only small UAS (55 lbs. or less in Gross Takeoff Weight) will be approved for operations in the permanent Arctic areas and corridor routes.

During the implementation of this plan, the FAA will develop processes to facilitate the safe operation of unmanned aircraft beyond line of sight, as directed in the Act. However, initial operations will only be permitted within line-of-sight, which will require both a pilot and a visual observer. A phased approach will be necessary to transition from line-of-sight operations to beyond line-of-sight operations. The FAA will review existing airmen certification and medical requirements to determine the appropriate qualifications or rely on sUAS rulemaking to set qualification standards.

Aircraft Certification

Providing airworthiness approval for sUAS will require careful analysis and consideration of which certification rules may be used to expeditiously approve the vehicles. We will review the current processes that have been used or are currently in use to approve sUAS. For example, one existing rule that may be usable to expedite certification efforts is FAR *§ 21.25 Issue of type certificate: Restricted category aircraft.* However, use of this rule would be restricted to sUAS that have been "*manufactured in accordance with the requirements of and accepted for use by, an Armed Force of the United States".*

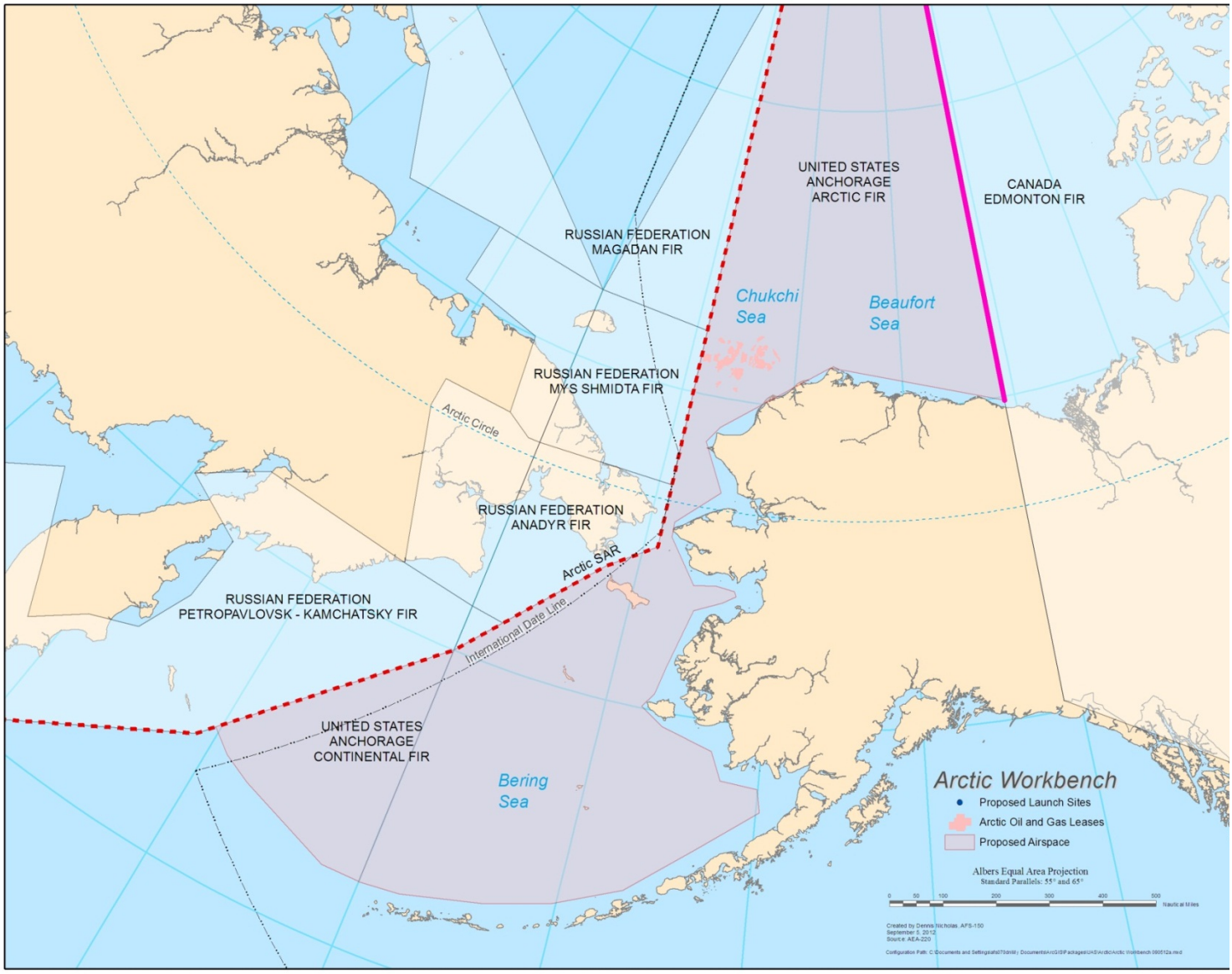
The FAA will also need to determine a method of production approval that will be required for all type-certificated UAS. One approach to address this would be to use the Light Sport Airplane production approach in which the applicant demonstrates compliance to industry consensus standards. However, this approach is not currently permitted for aircraft that operate commercially. Another approach could be to develop a hybrid production approval scaled to UAS needs which could allow limited commercial operations. The FAA team will examine and choose the best alternative to approve aircraft for operation in the permanent Arctic areas. Regardless of the chosen path, the approval will be strictly limited to operating in the permanent Arctic areas.

Whichever certification standard is selected, all sUAS will be required to demonstrate conformity and conduct operations in accordance with certification design standards while conducting flight operations in the permanent Arctic areas and corridor routes

Safety Considerations

In order to achieve and maintain the highest possible level of safety in the permanent Arctic areas and corridor routes, the FAA will carry out safety studies in compliance with Section 335 of the Act. This means ensuring the safety of any other airspace user as well as the safety of persons and property on the ground. The safety studies will be conducted according to the approved Air Traffic Organization Safety Management System.

Arctic Area per the FMRA Plan



AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 14-02 – October 28 - 30, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-286

Subject: Airport Diagram Symbol for Non-Standard Runway Holding Position Marking in Conjunction with a Hot Spot

Background/Discussion:

Runway Incursions have been attributed to pilots crossing runway holding position markings because the markings were placed in an unexpected or non-typical location. Such is the case in SEA. Several Runway Incursions (RI) took place in SEA at Taxiway Foxtrot and Runway 34R, one of which involved an air carrier aircraft missed the markings and crossed under a departing air carrier aircraft. In this case, Taxiway Foxtrot is a taxiway that meets the runway entrance at an angle and the holding position marking is unexpectedly encountered prior to the entrance. (See graphic at the end of this document.) Actions taken to mitigate this threat included the then Director of Runway Safety, Wes Timmons, coordinated with charting to chart the runway holding position marking location and published a hot spot. The following is the hot spot description that was published as a result of the RIs that took place at this location on SEA airport.

HS 3	Acft exiting Rwy 34C at Twy F sometimes enter Rwy 34R without authorization, taxi distance is very short and pilots should use caution to stop at hold line unless authorized to cross the rwy.

Please see image of Hot Spot 3 and SEA airport diagram at the end of this document.

Another example of pilots involved in RIs due to encountering the holding position marking at an unexpected location is North Las Vegas Airport (VGT). VGT was the nation's leading airport for runway incursion in 20011/2012. Over 90 % of the PDs that occurred during this time period were attributed to itinerant pilots that completed the run up checks and then crossed the hold bar without authorization. Of those pilot interviews Runway Safety Program was able to capture, the common theme was pilots encountering the hold position marking unexpectedly. The rate of RIs were so high that the condition caused the FAA and Clark County to redesign the run up area and runway entrances.

Runway Incursion remains a high priority for the FAA. Providing Pilots and other stakeholders timely, accurate, and meaningful information is key to mitigating Runway Incursion.

Recommendation:

Remove the prohibition against showing non-standard hold lines in conjunction with a Hot Spot that already exists for this purpose. In short, publish both the hot spot AND the hold line.

IACC 4 Reference: "Non-standard runway holding position lines with "RWY HOLD" label. (Depicted only by special request and only when a Hot Spot has not been previously established at the site for this purpose.)"

Recommended wording: "Non-typical locations of runway holding position markings with "RWY HOLD" label when requested by appropriate authority. Non-typical runway hold lines may be depicted in conjunction with a Hot Spot if established at the same location.

Please note that the use of phrase "non-standard hold lines" for the purpose of this document, is defined as holding position markings located in non-typical or unexpected locations, and should be referred to as such in the change.

Comments: The following graphics are provided for references to the above background para.

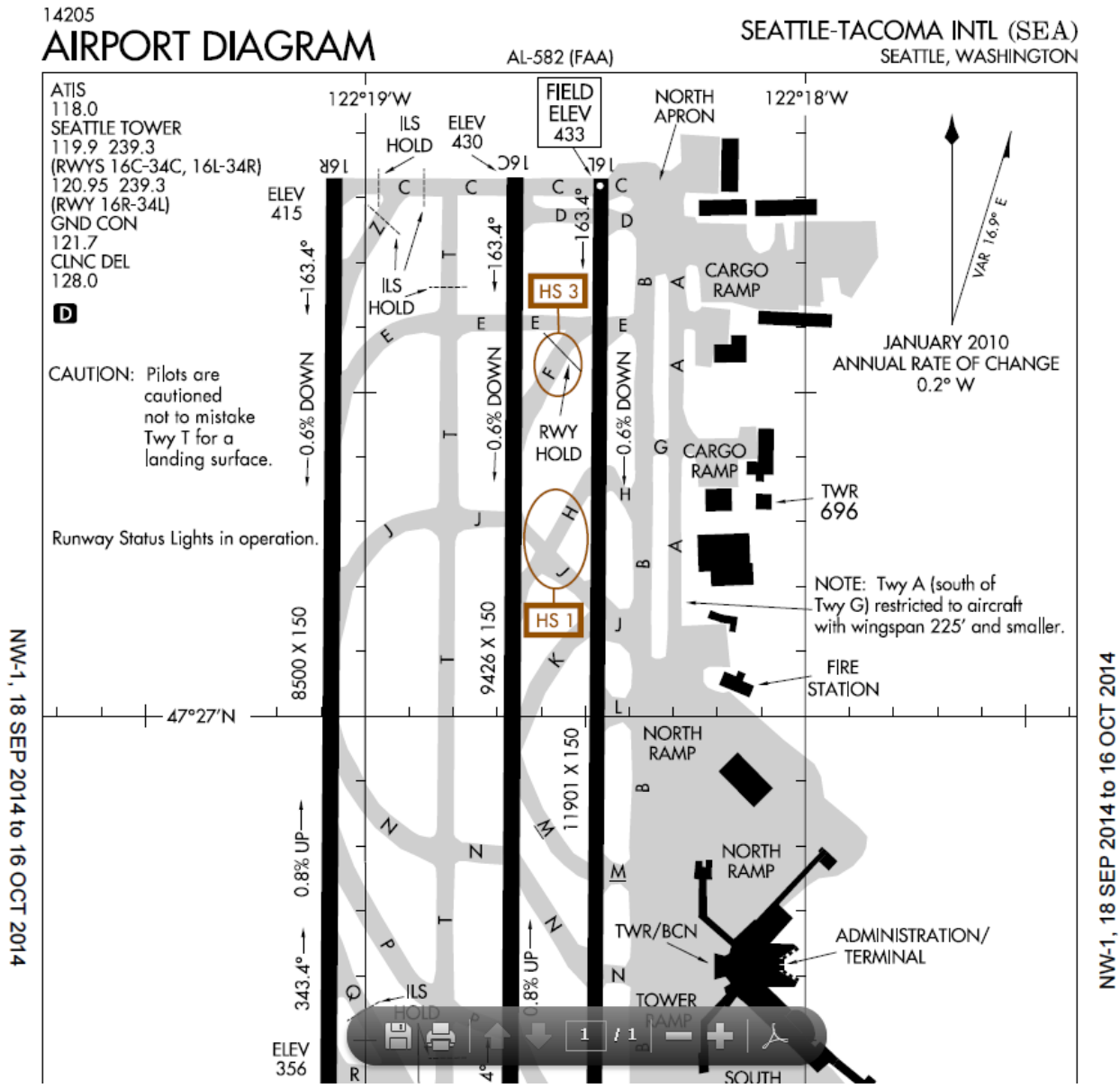


Figure 1 - Seattle-Tacoma International (SEA 9/24/2014)

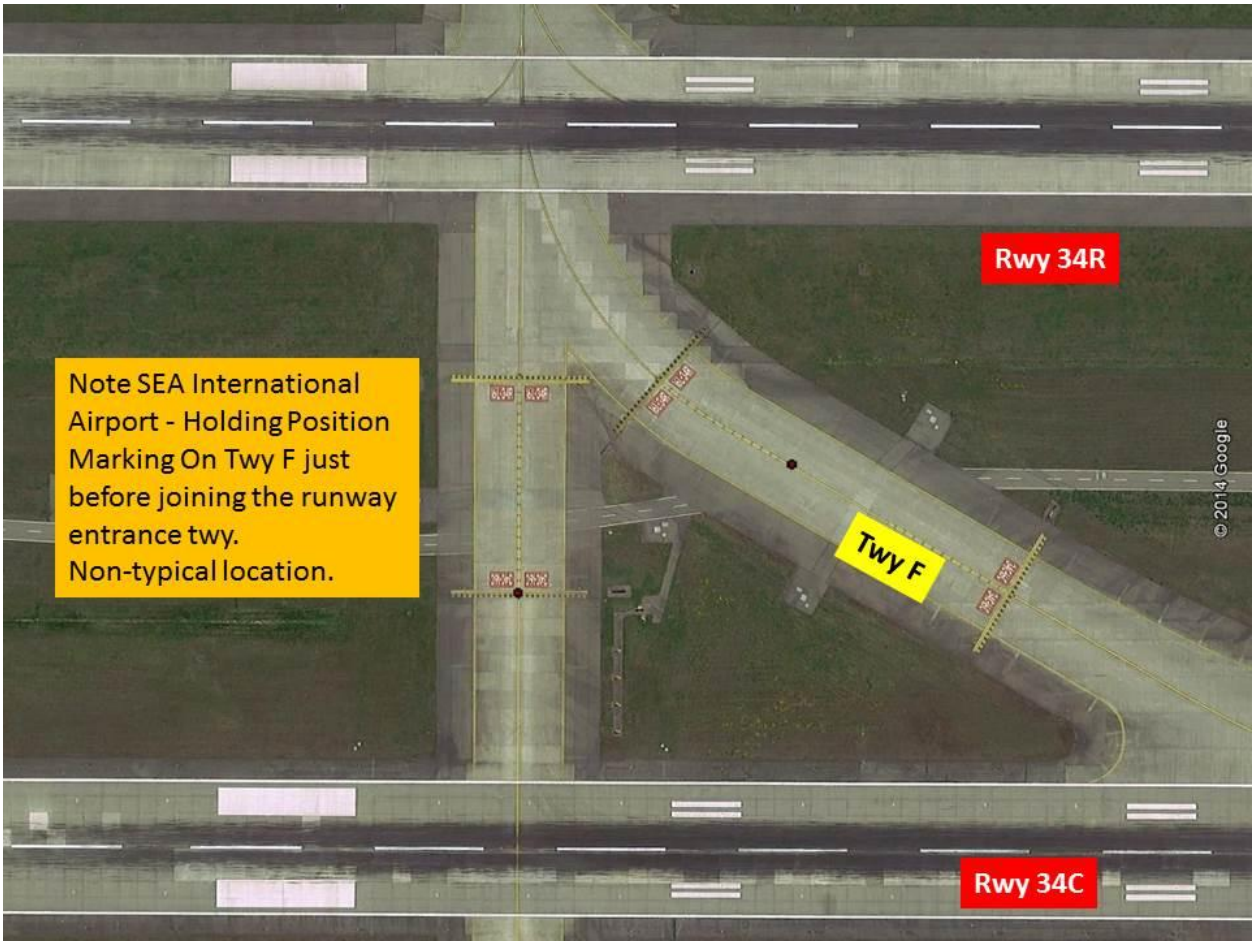


Figure 2 - SEA HOT SPOT 3

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AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 14-02 – October 28-30, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-287

Subject: Update TEC route descriptions to use Waypoints

Background/Discussion:

TEC (Tower Enroute Control) routes are published in the AFD. In many cases, these routes specify waypoints or route segments using radial/radial, radial/distance, or radials. In many, if not most cases, there are waypoints designated for the same locations that are described in the routes. When one requests a Tower Enroute, the clearance may be delivered in full. It is

It is more difficult to copy the detail clearance and to load it into the GPS/FMS with the current format than using a named waypoint at the exact same spot. So for example on a route KCRQ SANN31 KCMA, the route specified is:

OCN V23 SLI SLI272R SMO125R SMO VNY

It is identical to:

OCN V23 POPPR SMO VNY.

The latter form is much easier to digest and to enter into the GPS/FMS. For /A or /U aircraft, the radial and distance information is on the Low Altitude Enroute charts, which the pilot must use to determine other portions of the existing route, airways for example. These routes were originally developed at a time when RNAV was not generally available and the intersections were not named. This will update the routes to take advantage of current RNAV capability, while not affecting /A or /U equipped aircraft.

Recommendations:

Edit the route descriptions to replace the radial/radial and radial/distance notation with the corresponding waypoint names to simplify the description.

Note: I am not suggesting to change the route, just make the description of the route easier to digest and use.

Comments:

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AERONAUTICAL CHARTING FORUM
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Meeting 14-02 – October 28 - 30, 2014

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 14-02-288

Title: Airport Reference Codes in the AFD

Subject: Airport/Facility Directory (AFD) Information Re: Approach / Departure Reference Codes (APRC/DPRC) for Airport Movement Area Operations have been adopted within Airport Design, Advisory Circular 150/5300-13A, change1. These codes reflect the proper aircraft design groups' utilization for existing runway to taxiway separations. Reference to these codes allows users to quickly assess a runway's suitability related to critical geometry and visibility without special operations.

Background/Discussion: (APRC/DPRC) have been adopted within Airport Design, Advisory Circular 150/5300-13A. These codes reflect the proper aircraft design groups' utilization to existing runway to taxiway separations. Reference to these codes allows users to quickly assess the utility of the movement areas without special operations. Existing airport infrastructure often meet challenges in accommodating growing aircraft fleet mix. Airports operational capabilities can be identified quickly and efficiently through the use of the APRC and DPRC. The approach/departure reference codes (APRC/DPRC) describe the current operational capabilities of a runway and adjacent taxiways where no special operating procedures are necessary. It is critical for airport operators, air traffic control and pilots to be aware of the airport movement area's capability when referencing Airport/Facility Directory (AFD).

The APRC is composed of three components: Aircraft Approach Category (AAC), Airplane Design Group (ADG), and visibility minimums. Visibility minimum are expressed as RVR values in feet. The APRC denotes a combination of AAC, ADG and visibility condition under which landing operations may be conducted for an existing (runway/taxiway) separation without any operational mitigation. Table below depicts a specific APRC of the largest ADG with the lowest runway visibility condition for an existing runway to taxiway separation.

Approach Reference Code (APRC)

Visibility Minimums	Runway to Taxiway Separation (ft)									
	≥150	≥200	≥225	≥240	≥250	≥300	≥350	≥400	≥500	≥550
Visual	B/I(S)/VIS	B/I(S)/VIS	B/I/VIS	B/II/VIS	B/II/VIS	B/III/VIS D/II/VIS	B/III/VIS	D/IV/VIS D/V/VIS	D/VI/VIS	D/VI/VIS
Not lower than 1 mile	B/I(S)/5000	B/I(S)/5000	B/I/5000	B/II/5000	B/II/5000	B/III/5000 D/II/5000	B/III/5000	D/IV/5000 D/V/5000	D/VI/5000	D/VI/5000
Not lower than 3/4 mile	B/I(S)/4000	B/I(S)/4000	B/I/4000	B/II/4000	B/II/4000	B/III/4000 D/II/4000	B/III/4000	D/IV/4000 D/V/4000	D/VI/4000	D/VI/4000
Lower than 3/4 mile but not lower than 1/2 mile		B/I(S)/2400	B/I/4000 B/I(S)/2400	B/II/4000	B/I/2400	B/III/4000 [1] D/II/4000 B/II/2400	B/III/2400	D/IV/2400 D/V/2400	D/VI/2400	D/VI/2400
Lower than 1/2 mile								D/V/2400 D/IV/1600	D/VI/2400 D/V/1600	D/VI/1600

Notes: (S) denotes small aircraft

Entries for Approach Category D also apply to Approach Category E. However, there are no Approach Category E aircraft currently in the civil fleet.
For ADG-VI aircraft with tail heights of less than 66 feet (20 m), ADG-V separation standards may be used.

1. How to use this table:

Each APRC entry denotes a combination of Aircraft Approach Category, Airplane Design Group, and visibility condition under which landing operations may be conducted without operational mitigations. Within an APRC, operations may be conducted by airplanes up to the AAC and ADG, and down to the visibility conditions noted. In this example, with visibility minimums of lower than 3/4 mile but not lower than 1/2 mile, the applicable APRCs are B/III/4000, D/II/4000, and B/II/2400. This means that following aircraft may land:

- Within Approach Categories A & B, Airplane Design Groups I(S), I, II, & III, down to 3/4 mile visibility.
- Within Approach Categories C & D, Airplane Design Groups I & II, down to 3/4 mile visibility.
- Within Approach Categories A & B, Airplane Design Groups I(S), I & II, down to 1/2 mile visibility.

The DPRC represents those aircraft that can take off from a runway while any aircraft are present on adjacent taxiways, under particular meteorological conditions with no special operational procedures. Table below allow a specific ADG to depart a runway based on a set runway to taxiway separation.

Departure Reference Code (DPRC)

Runway to Taxiway Separation (ft)

≥ 150	≥ 225	≥ 240	≥ 300	≥ 400	≥ 500
B/I(S)	B/I	B/II	B/III D/II	D/IV D/V [1]	D/VI [2]

Notes: (S) denotes small aircraft

Entries for Approach Category D also apply to Approach Category E. However, there are no Approach Category E aircraft currently in the civil fleet.

1. Example: With a runway to taxiway separation of 300 feet, the following airplanes may depart:

- Within Approach Categories A & B, Airplane Design Groups I(S), I, II, & III.
- Within Approach Categories C & D, Airplane Design Groups I & II.
- Thus, an airplane of Approach Category C, Airplane Design Group III requires a runway to taxiway separation of 400 feet for departure.

2. For unrestricted operations by ADG-VI airplanes, a runway to taxiway separation of 500 feet is required. However, ADG-VI airplanes may depart with aircraft on the parallel taxiway where the runway to taxiway separation is as little as 400 feet as long as **no ADG-VI aircraft** occupy the parallel taxiway beyond 1500 feet of the point of the start of takeoff roll.
When there is snow, ice or slush contamination on the runway, ADG-VI airplanes may depart with aircraft on the parallel taxiway where the runway to taxiway separation is as little as 400 feet as long as **no aircraft** occupy the parallel taxiway beyond 1500 feet of the point of the start of takeoff roll.

For reference, the Aircraft Design Group, (ADG) is determined by either the aircraft wingspan or tail height, whichever is most restrictive, as below.

Table 1-2. Airplane Design Group (ADG)

Group #	Tail Height (ft [m])	Wingspan (ft [m])
I	< 20′ (< 6 m)	< 49′ (< 15 m)
II	20′ - < 30′ (6 m - < 9 m)	49′ - < 79′ (15 m - < 24 m)
III	30′ - < 45′ (9 m - < 13.5 m)	79′ - < 118′ (24 m - < 36 m)
IV	45′ - < 60′ (13.5 m - < 18.5 m)	118′ - < 171′ (36 m - < 52 m)
V	60′ - < 66′ (18.5 m - < 20 m)	171′ - < 214′ (52 m - < 65 m)
VI	66′ - < 80′ (20 m - < 24.5 m)	214′ - < 262′ (65 m - < 80 m)

The APRC, ADG and DPRC tables above are not intended for pilot use. However, they do contain useful operational information identifying runway and taxiway capabilities in accommodating largest ADG movement with no special operational mitigation.

Recommendations: The AFD should clearly reference approach and departure codes applicable to the airport's movement areas where special operations are not needed. This information could be included as a separate section and listed by runway, similar to Runway Declared Distance Information.

For example, at Indianapolis Intl (IND):

APPROACH, DEPARTURE REFERENCE CODE PER APPLICABLE RUNWAY

RWY05L APRC D/VI/2400, DPRC D/VI, RWY05R APRC B/II/2400, DPRC B/III, D/II, RWY14 APRC D/V/2400, D/IV/1600, DPRC D/IV, D/V, RWY23L APRC B/III/2400, DPRC B/III, D/II, RWY23R APRC D/VI/2400, D/IV/1600, DPRC D/VI

Comments:

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